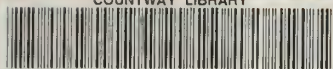
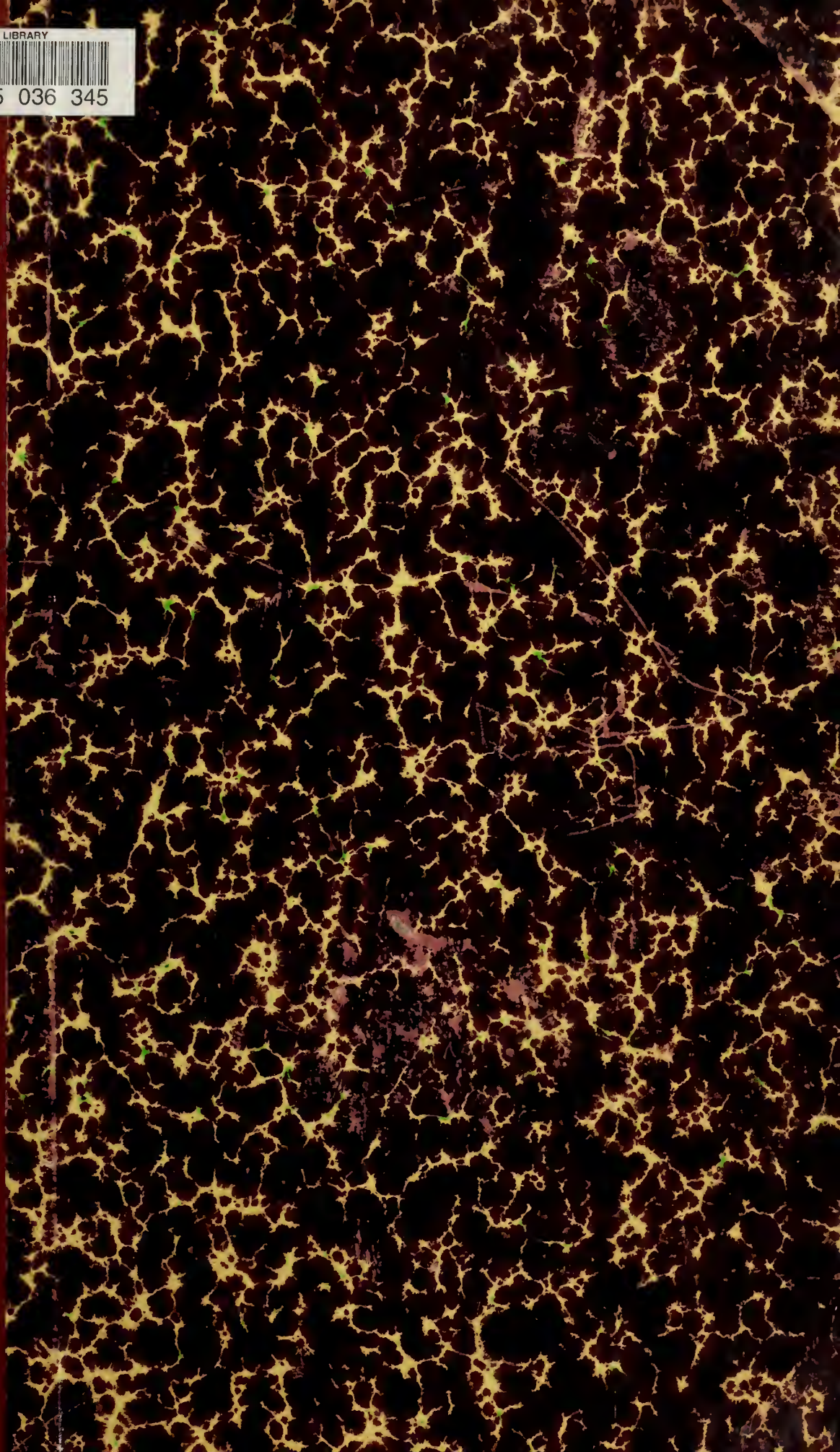


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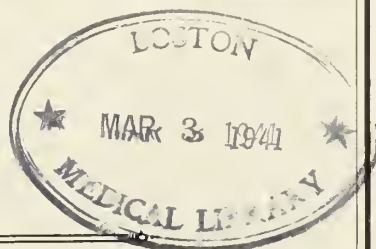
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VOL. XXXI

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No. 1

*The essence of science is to  
discover identity in difference.*  
—F. S. Marvin



### CONTENTS

#### ORIGINAL ARTICLES

- Clinical Types of Hepatic Insufficiency and Their Treatment  
Albert M. Snell, M.D., Rochester, Minnesota 1
- Results After Thoracoplasty for Pulmonary Tuberculosis  
Vernon W. Petersen, M.D., Iowa City 7
- Nonspecific Lung Disease in Children  
Clinton E. Harris, M.D., Grinnell 9
- Obstruction of the Abdominal Aorta and the Inferior Vena  
Cava due to "Saddle Thrombus" and Tumor Mass Respec-  
tively Edward S. Brewster, M.D., Boone 12
- Gallbladder Disease and Its Complications  
F. R. Peterson, M.D., Iowa City 15
- Acute Surgical Conditions in the Abdomen and Their Treat-  
ment A. Q. Johnson, M.D., Sioux City 22
- Painless Appendectomy Ralph L. Gorrell, M.D., Clarion 27
- The Finley Hospital Clinicopathologic Conferences  
Giant Cell Xanthoma of the Wrist  
D. C. Conzett, M.D., and E. R. Young, M.D., Dubuque 29
- State Department of Health  
Walter L. Bierring, M.D., Des Moines 32

(Continued on page iv)

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# The JOURNAL

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## Iowa State Medical Society

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No. 1

### CLINICAL TYPES OF HEPATIC INSUFFICIENCY AND THEIR TREATMENT\*

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The liver possesses multiple functions, certain of which are extremely resistant to all but the most severe injuries to the hepatic parenchyma; other functions are more sensitive and are disturbed by less serious affections. There is also considerable variation in the importance of the individual functions of the liver so far as life and health are concerned. Some are of relatively minor significance whereas other functions cannot be disturbed without grave risk. Among the hepatic activities which are clinically most significant we find:

1. Excretion of bilirubin.
2. Manufacture of bile salts.
3. Detoxification, which is believed to play an important part in the disposal of endogenous and exogenous toxins.
4. Important metabolic functions of maintaining a normal content of glycogen in the liver cells and of sustaining the level of glucose in the blood.
5. Manufacture of such proteins as fibrinogen and prothrombin and important contributions to the formation of serum albumin and of hemoglobin.
6. Storage of certain vitamins and formation and utilization of other essential substances.

When one considers the multiplicity of these functions of the liver and their relation to the general metabolic processes and nutrition of the individual it is clear that hepatic insufficiency may be an exceedingly complex affair. Theoretically, all functions of the liver may fail simultaneously because of disease, or only one or two functions may be affected. Many aspects of the clinical problem of "liver failure" have not been investi-

gated and only fragments of information are available in regard to some of the symptoms and signs of the condition. It appears that at least four types of hepatic insufficiency are clinically recognized: first, the syndrome of "cholemia" with associated renal insufficiency; second, the syndrome of postoperative cholorrhea, also frequently associated with failure of renal function; third, a disturbance of the central nervous system usually referred to as "hepatic coma", and fourth, the hemorrhagic diathesis. Each of these syndromes may appear singly or in combination with other signs of hepatic failure. It is important to recognize the salient clinical features and to know, as far as possible, the mechanism that underlies each of these syndromes, not as an exercise in physiologic chemistry but because of important problems of therapy.

#### CHOLEMIA

The best known syndrome of hepatic failure is that which has been described as cholemia; like its analogue, uremia, its real nature is unknown. The term cholemia implies saturation of the blood and tissues with some constituent of bile which has a toxic effect on the organism. The toxicity of bile cannot be questioned; it is, nevertheless, fairly clear that the level of bilirubin in the blood and tissues is of little physiologic importance. Whether or not the accumulation of bile acids under these conditions has any bearing on the symptoms of cholemia cannot be stated with any certainty. For these reasons, the term cholemia is not one which expresses the real nature of the condition; perhaps a better term is "hepatargia" which has been used by some writers.

Cholemia may develop during the course of primary hepatic disease or obstructive biliary cirrhosis. Cholemia may ensue as a terminal phenomenon in cases of acute atrophy of the liver; however, it is more commonly seen in the post-operative state, especially following operations for the relief of biliary obstruction. The clinical man-

\*Presented before the Eighty-ninth Annual Session, Iowa State Medical Society, Des Moines, May 1, 2 and 3, 1940.

ifestations as described by Walters and Parham are, unhappily, too familiar. The chief clinical symptom which is noted is a progressive increase of jaundice in spite of the fact that there may be no actual obstruction to the biliary passages; the color of the jaundice itself changes and a deepening orange cast to the skin is sometimes apparent. Some patients exhibit visible cyanosis and hyperpnea and occasionally edema or anasarca may be noted. A certain degree of dulness of the sensorium may occur; the urinary output diminishes and during the course of a few days anuria may develop. If there is external drainage of bile through a T tube this will also diminish in amount. Laboratory findings are characteristic: the concentration of serum bilirubin rises progressively and there is often a parallel rise in urea and nonprotein nitrogen; the carbon dioxide combining power of the blood may be decreased, although marked acidosis is not common. In cases of primary atrophy of the liver, particularly, there may be a marked decrease in the blood cholesterol and an almost complete disappearance of cholesterol esters.

The few facts that pertain to the mechanism by which symptoms of hepatargia develop may be briefly stated. There is, of course, a progressive failure of the excretory function of the liver in respect to bilirubin; this is of no great physiologic significance but usually contributes to the most striking clinical finding, namely, the deepening jaundice. There is also evidence to indicate that the detoxifying function of the liver is conspicuously at fault in these patients. This protective mechanism having failed, the burden of excreting body wastes falls entirely on the kidneys; these organs prove unequal to the task and secondary renal insufficiency develops, as is shown by an accumulation of nitrogenous waste products and by acidosis. The cyanosis which is manifested by some of these patients has been shown to depend on a qualitative change in hemoglobin and its resultant failure to become saturated with oxygen at the tension of this gas normally present in the pulmonary alveoli. This physiologic defect can be demonstrated by a study of the dissociation curve of hemoglobin.<sup>7</sup> The degree of anoxemia present in some of these cases is of sufficient magnitude to cause further deterioration of the hepatic parenchyma if the condition is not corrected.

*Treatment.* The most important feature of treatment is prophylaxis. Adequate preoperative preparation of patients, with especial reference to measures that will favor regeneration of hepatic cells and restoration of the normal hepatic content of glycogen, is of paramount importance. There

are two danger signals to be borne in mind in consideration of the surgical risk in cases of obstructive jaundice. A high or rising level of serum bilirubin is of grave prognostic significance and the same may be said of a falling level of cholesterol and esters in the blood. Of even greater usefulness is the hippuric acid test for the detoxifying function of the liver. A number of observers have demonstrated that the risk of hepatic insufficiency is abnormally high in patients whose preoperative excretion of hippuric acid is less than 50 per cent of the normal.<sup>2, 8 and 13</sup> It is true that the hippuric acid test probably does not measure a specific detoxifying function, the failure of which is responsible for the clinical syndrome, but it does give adequate information as to the probability of development of hepatic insufficiency.

Active treatment is largely a matter of administering glucose intravenously to provide a source of nutrient material and to dilute and eliminate toxins, to improve renal function and to favor the storage of glycogen in the liver, thus protecting the parenchyma of the liver. The amount of fluid and glucose required may be large and one should not hesitate to administer it by continuous infusion, usually as a five per cent solution. The development of slight peripheral edema is of no moment and should be ignored. Jones,<sup>5</sup> in a survey of patients treated at the Massachusetts General Hospital, has shown that the continued use of glucose has reduced greatly the mortality rate of hepatic insufficiency of this type. According to this author, the development of diuresis during the course of treatment is an extremely favorable sign.

Transfusion of blood may also be employed with great advantage to the patient for three reasons: first, to restore a normal concentration of hemoglobin; second, to correct the anoxemia so frequently present;<sup>6</sup> and third, to supply much needed plasma protein, thus maintaining the colloid osmotic pressure of the patient's serum. It must be emphasized that the liver is extremely susceptible to a lack of oxygen and that administration of oxygen by nasal catheter, mask or tent may be of considerable importance in the correction of anoxemia. Patience, persistence and optimism are necessary to successful therapy; many a patient whose situation has seemed hopeless has survived because of the attention of a physician who has refused to acknowledge defeat. This statement, in my experience, has applied to patients with primary hepatic disease no less than to those in the postoperative state. The liver is an extremely resistant organ and under proper treatment may recover from the most serious injuries.



## POSTOPERATIVE CHOLORRHEA

The striking but somewhat uncommon syndrome of postoperative cholorrhea has developed chiefly among older individuals who have hepatic damage of long standing due to a neglected stone of the common duct. It is rarely experienced by the average patient who has choledocholithiasis. Exceptionally, it may follow the external drainage of completely obstructed biliary passages, an operation which is sometimes done as a preliminary procedure in the repair of stricture of the common duct and for the relief of malignant biliary obstruction. In this syndrome, the postoperative course of events follows a comparatively stereotyped path. After a few days of normal or slightly increased external biliary drainage, profuse cholorrhea develops, sometimes within the course of twenty-four hours. Large amounts of pale, watery bile are excreted, the quantity sometimes reaching five to six liters a day. This bile is extremely poor in bilirubin; concentrations of bile acids of about one-tenth the normal value are the rule and in some cases even lower concentrations have been seen. The bile excreted during a period of cholorrhea contains large amounts of chloride and mineral base (Table I); the losses

TABLE I  
CHOLORRHEA: LOSS OF BASE AND CHLORIDE

Days postoperatively	Output, c.c.		Chloride, gm.		Base	
	Bile	Urine	Urine	Bile	Urine*	Bile*
7 and 8	6710	810	0.38	50.2	0.4	9.4
9	4000	1070	1.9	28.9	0.7	5.6
9 to 15	22 mg. of sodium chloride and 20 mg. of sodium lactate were given daily.					
13	1070	2090	.....	.....	2.3	1.5
14	1130	1830	7.2	8.1	2.4	1.5

\*As liters of tenth normal base.

of electrolytes by this means may be very large. As will be seen from the table, the total amount of base excreted is approximately twice the normal, although the concentration of material in the bile is reduced about 50 per cent. As one would expect under such circumstances, a decreased amount of urine is excreted and urinary levels of chloride and base are diminished in inverse proportion to the increases noted in the bile. The concentration of blood urea and nonprotein nitrogen rises rapidly and that of the blood chlorides diminishes. In at least one case which has been studied, there was a fall in blood sodium and blood serum calcium. The level of serum bilirubin remains constant in spite of the free flow of bile

or it may gradually rise. If the syndrome is allowed to continue without vigorous treatment, dehydration and renal insufficiency, coma or hemorrhagic features ensue, with a fatal outcome.

The physiologic basis for cholorrhea is entirely unknown. Apparently the damaged liver loses the capacity to excrete bilirubin and to form bile salts while it retains the ability to excrete chloride and base in concentrations which, at times, may be greater than those present in the blood. This would, of course, imply some active secretory effort on the part of the liver in respect to electrolytes. The behavior of the liver under these circumstances recalls the phenomenon of "white bile" formation in obstructed biliary passages. As is well known, this bile contains no bilirubin, only traces of bile salts and relatively large amounts of chloride.

*Treatment.* Prophylaxis is of little use for such a condition as postoperative cholorrhea since it affects chiefly individuals who are recognized as poor surgical risks but for whom the indications for operation can hardly be avoided. Active treatment obviously consists of replacing lost fluid, chloride and base. This is best accomplished by the administration of a physiologic solution of sodium chloride with five per cent glucose, or if acidosis is present, a two per cent solution of sodium lactate with five per cent glucose may be employed. An attempt should be made to maintain a positive fluid balance but this is often very difficult to accomplish. With careful attention to the chemical constitution of the blood and of the bile, however, an approximate control of the chemical disturbances incidental to cholorrhea may be attained. If possible, bile should be returned to the intestine by clamping the T tube as much as possible without producing discomfort to the patient. The prognosis is not necessarily grave, and recovery may be expected under proper treatment.

## HEPATIC COMA

It is difficult to define or to describe hepatic coma, but once seen it is not likely to be forgotten. The classical form develops during the course of chronic primary disease of the hepatic parenchyma. It is a terminal event in a comparatively large percentage (about a third) of patients who die of atrophic cirrhosis. Coma, however, may develop postoperatively as a part of the two varieties of hepatic insufficiency described; namely, cholemia and cholorrhea. Symptoms may appear insidiously but not infrequently coma appears "out of a clear sky" with little warning. The symptoms are extremely irregular; often there is

a preliminary state of confusion and the patient may be disoriented with respect to time and space. Some patients experience unusual restlessness and irritability and it may be difficult to keep the affected individual quiet without physical restraint; this state of affairs may be replaced by somnolence or the patient may alternate between periods of mild mania and stupor. Often within the course of a single day the patient may lapse into deep coma with little warning. As a rule, little can be made out on physical examination except for some evidences of cerebral irritation; it is not uncommon for slight rigidity or spasticity of the muscles to be noted. Occasionally one can demonstrate a transient ankle clonus or patellar clonus; the Babinski sign may be present, bilaterally or unilaterally. Purposeless movements and irregularities of respiration are often seen.

*Mechanism.* The underlying physiologic disturbances which lead to hepatic coma are as yet unknown. There is rarely any important change in the blood urea, blood sugar, carbon dioxide combining power, blood chloride or bilirubin; the spinal fluid has been examined without showing any significant abnormalities and intracranial pressure is not altered. The recent studies of Jolliffe<sup>4</sup> in the psychopathic wards of Bellevue Hospital have given some valuable therapeutic leads which in turn may serve to explain the nature of the condition. Jolliffe noted that a considerable number of patients with the so-called Korsakoff psychosis were suffering from Vitamin B<sub>1</sub> deficiency as shown by an associated polyneuritis. He attempted to supply extra thiamin chloride to these patients together with a diet rich in Vitamin B complex. The results were somewhat better than were obtained in a group in which treatment was by ordinary measures without the addition of vitamin concentrates. Jolliffe also noted that certain patients with the so-called encephalopathic syndrome associated with chronic alcoholism responded in somewhat the same manner as the psychotic pellagrin when nicotinic acid was administered. This latter condition, which is similar to but not identical with hepatic coma, was fatal in 90 per cent of untreated cases, whereas the administration of glucose and nicotinic acid reduced the mortality rate to a level of about 12.5 per cent. Since it is well known that many patients with cirrhosis of the liver have been on inadequate diets and also that they are unable to utilize vitamins normally because of injury to the liver, it seems reasonable to suppose that there may be some underlying relationship between hepatic coma and the aforementioned encephalopathic states.

There are some recent physiologic studies which tend to substantiate the possible relationship between thiamin and nicotinic acid deficiencies and the cerebral symptoms already described. Maddock,<sup>9</sup> in a recent series of studies on hepatectomized animals, showed by means of electroencephalographic records that there is a profound depression of cerebral activity in the late stages of hepatectomy. In these animals normal cerebral rhythm could be restored, at first, by the administration of glucose; still later, glucose ceased to exert its usual effect and the blood lost its normal power of glycolysis. The breakdown of glucose through the stage of hexosephosphate to pyruvic acid and thence to acetaldehyde and water depends on the normal activity of two enzyme systems both of which are chemically related to certain constituents of the Vitamin B complex. One of these systems which is represented by cozymase 1 and 2 (di- and triphosphopyridine nucleotides) is believed to act on hexosephosphate. Each of these enzymes contains a molecule of nicotinic acid. Pyruvic acid is apparently acted on by co-carboxylase in association with a co-enzyme; co-carboxylase is in fact thiamin pyrophosphate. There is good evidence to show that the first enzyme system is exhaustible and that its depletion is hastened by a pure carbohydrate intake. Certainly, there is some physiologic basis for Jolliffe's belief that the encephalopathic syndrome is a manifestation of a complete lack of nicotinic acid.

These conceptions, while highly theoretical, have a direct bearing on treatment. If the body operating under the handicap of hepatic damage cannot break down and utilize glucose as fuel, it seems logical that we should provide those substances (that is, thiamin and nicotinic acid) which will allow the enzyme systems normally concerned with glucose metabolism to be restored. This program of treatment has been carried out in three cases with rather striking results. The usual plan is to administer a five per cent solution of glucose intravenously by the continuous drip method, adding thiamin chloride and nicotinic acid in large doses until the patient's consciousness is restored. As Jolliffe's studies indicate, the same results could possibly be attained by the administration of thiamin chloride and nicotinic acid orally or by stomach tube. The results as shown by the following report of a case seem to point to the desirability of further investigation of the theoretical and practical value of this form of therapy for hepatic insufficiency with marked cerebral symptoms.

*Case Report.* A man who was a cook, fifty-three



years of age, with a long history of alcoholism, was admitted to the hospital on November 29, 1939, with the classical picture of a decompensated portal cirrhosis. The abdomen was tightly distended with fluid. The most significant result of laboratory examinations was retention of bromsulfalein, grade 4. The patient's abdomen was tapped on the day of admission and 2,000 cubic centimeters of clear, yellowish fluid were removed. After paracentesis the patient continued to have much abdominal distress and he gradually became drowsy and confused. On the following day, he was violently irrational and required restraint to be kept in bed; later, periods of stupor developed and the patient alternated between deep coma and mild mania. Later in the day the patient became more deeply comatose and could not be aroused. Examination at that time revealed a diminution of tendon reflexes, slight irregularity of the pupils and generalized muscular spasticity, grade 1 to 2. Because of the history of alcoholism and the equivocal evidence of peripheral neuritis, the administration of thiamin chloride in doses of 100 milligrams daily together with nicotinic acid in doses of 150 milligrams, was suggested. The patient already had received glucose solution by vein and these medications were added to the next infusion. On the following morning, the patient's condition was definitely better; he responded to questioning and seemed mentally clearer than he had been in some time. After forty-eight hours of treatment he was mentally clear and entirely rational. A more detailed neurologic examination showed definite evidence of peripheral neuritis. After two more days of treatment all signs and symptoms referable to the patient's mental state had cleared and he was allowed to leave the hospital.

Experiences with at least two other patients with atrophic cirrhosis of the liver and hepatic coma are equally encouraging; one patient was brought out of deep coma on two occasions and out of severe confusional states on two other occasions. Observations of three patients do not, of course, settle the problem and one may say that there is little advantage in being able to revive a patient from hepatic coma and then be unable to prevent his death from some other manifestation of hepatic disease. It is not at all clear, however, that coma necessarily is a final or terminal event and it may ultimately prove to have about the same significance as delirium has in cases of pellagra.

#### HEMORRHAGIC DIATHESIS

The hemorrhagic state which develops as a sequel to obstructive jaundice has been so thoroughly studied, especially since the advent of Vitamin K, that little need be said about it herein. It is known that in such cases the difficulty arises because of failure of absorption of fat-soluble Vitamin K from the intestine, with subsequent hypo-

prothrombinemia<sup>3</sup>. On administration of bile or bile salts and Vitamin K concentrates, the plasma prothrombin rises to normal and the hemorrhagic condition is speedily corrected. The prothrombin deficit which develops in the course of primary hepatic disease, or which may appear as a result of long-standing uncorrected biliary obstruction with secondary hepatic damage, responds in an entirely different manner. In these cases, the normal levels of plasma prothrombin cannot be completely restored even by the administration of bile, bile salts and Vitamin K concentrates or by the use of any of the newly discovered synthetic naphthoquinones. In other words, the deficiency of prothrombin in these cases is due primarily and solely to failure of the liver to manufacture the material.

The symptoms of the hemorrhagic diathesis in liver disease are too well known to require elaborate description. Usually, the first sign of trouble is slight bleeding from the gums or from incisions or puncture wounds. This may be neither extreme nor conspicuous. Within a day or so, one is likely to note the passage of a dark stool that contains blood. This may be followed by signs of free gastro-intestinal bleeding with a falling blood pressure, a rising pulse rate and signs of shock. If the condition persists untreated there may be bleeding into every organ of the body. It is not uncommon to note hematuria, menorrhagia or even bleeding into the central nervous system with signs of hemiplegia or paraplegia. Purpura may appear on the extremities and in a few cases a deficiency of platelets has been demonstrated.

A study of the coagulation time of the blood at first shows delayed formation of a clot; the blood later becomes virtually incoagulable. The prothrombin clotting time measured by the method of Quick shows a marked increase; quantitative determinations of prothrombin show a fall, usually to a level below 20 per cent of the normal. In some cases, prothrombin virtually disappears from the blood; in others, slight continued bleeding may occur with plasma prothrombin levels of about 30 per cent of normal.

The mechanism of prothrombin deficiency in these cases, as has been stated, is directly due to primary failure of formation of this substance in the liver. This was first demonstrated by the classical experiments of Smith<sup>12</sup> on dogs poisoned with chloroform. Bollman<sup>1</sup> has recently shown a similar defect in the metabolism of prothrombin in rats poisoned with carbon tetrachloride. Studies on hepatectomized animals<sup>15</sup> have shown that the liver is clearly the site of prothrombin formation;

partial hepatectomy will produce a marked diminution of plasma prothrombin, with subsequent restoration to normal levels as the liver tissue regenerates. After total hepatectomy there is virtually a disappearance of prothrombin from plasma. The rapidity of the fall of prothrombin after hepatectomy indicates that there is little storage of this material in the body.

*Treatment.* By definition, one would not expect a primary hypoprothrombinemia of liver disease to respond in a satisfactory manner to any therapy, since the liver has partially lost the power to form this essential substance. However, as is the case with partially hepatectomized animals, failure of hepatic function in this respect may be relative rather than absolute. Some patients who are treated with Vitamin K concentrates and bile salts showed definite, although somewhat slow, responses to treatment. At least one patient with known primary hepatic disease was tided over three episodes of hemorrhage successfully. In other cases of more extensive damage of the liver a complete lack of response to treatment was apparent. Transfusion, of course, will produce temporary beneficial results because of the small amounts of prothrombin present in transfused blood.

With the development of synthetic naphthoquinones it was believed that the solution of the problem was at hand. In the use of Vitamin K concentrates great difficulty was encountered in administering sufficient amounts to patients whose gastro-intestinal tracts were already filled with blood. Use of the injectible quinoid compounds seemed to offer considerably greater promise of success. Enough cases have been studied now to show that the quinones now available are by no means curative in all cases. It is apparent that certain patients with latent hemorrhagic tendencies and even some individuals with active bleeding can be kept at least in a stationary condition and gross bleeding can be prevented by the use of these substances. This temporary arrest, or control, of the hemorrhagic state has been accomplished successfully for some patients in spite of the fact that all other functions of the liver have continued to fail progressively. Recent experience seems to indicate that the simpler the structure of the naphthoquinone the greater the probability of success from its use. Naturally occurring Vitamins K<sub>1</sub> and K<sub>2</sub> with their very long side chains seem to be less effective than the simple compound 2-methyl-1, 4-naphthoquinone. It is possible that even less complex compounds such as the methyl-amino-naphthol compounds, re-

cently studied by Sharp and his co-workers, may prove to be the answer to the problem.

It is important to note that Bollman, who has studied the primary hypoprothrombinemia of liver disease in rats poisoned with carbon tetrachloride, has noted that a high carbohydrate diet is capable of furnishing a considerable degree of protection when administered with synthetic naphthoquinones. It seems probable that further study of the chemical nature of prothrombin and the relation of the quinoid or naphthol compounds to the structure of prothrombin may eventually solve the problem. So many advances in this field have been made in the past year that a satisfactory solution to the matter would not seem to be impossible.

#### SUMMARY

Hepatic insufficiency is not a simple affair; the multiple functions of the liver do not all fail at once and it is possible to recognize certain definite syndromes which are related to the failure of certain specific functions. The syndrome of so-called cholemia most probably depends on failure of the detoxifying function of the liver. The syndrome of cholorrhea, encountered in the postoperative state, may depend on some stimulus to the active secretion of chloride and base by the liver. Hepatic coma may depend on a deficiency in certain components of the Vitamin B complex with disturbances in the metabolism of glucose; there is theoretical and clinical evidence to indicate that it may be subject to correction. The hemorrhagic diathesis of primary hepatic disease is dependent on failure of the liver to form prothrombin. Present methods of treatment have not succeeded in controlling this condition entirely, but some temporary arrest of the process may be attained by suitable therapy.

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## RESULTS AFTER THORACOPLASTY FOR PULMONARY TUBERCULOSIS\*

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The cases to be presented here represent one phase of a follow-up survey on patients who have been treated at the Iowa State Tuberculosis Sanatorium at Oakdale. It is our intention, when the survey has been completed, to be able to compare the results obtained in the group of patients who have had thoracoplasties with the results obtained in patients who have had various other types of treatment, and further, to compare our results with those obtained in other clinics. It has been felt for some time that it would be desirable to get a definite conception of what surgical collapse therapy offered in the way of results as it has been employed at the University Hospital. Inasmuch as there is frequently a great variation in the results obtained by different surgeons using the same operation, we felt we could not justifiably recommend thoracoplasties to our patients on the basis of results reported from other clinics alone. This review of cases does not include all of the patients who have been treated by thoracoplasty at the University Hospital, but is limited to those patients who have been referred to us from the sanatorium at Oakdale. The reasons for limiting the survey to this group are chiefly those of convenience. Because of the location at Oakdale near the University Hospital it was possible to obtain the complete records on these patients with ease, and the Social Service Department at Oakdale cooperated in obtaining follow-up reports. This survey covers a group of patients from the Oakdale Sanatorium treated during the interval from 1925 to July 1, 1939.

It may be helpful in evaluating the results to be given, as well as interesting, to learn briefly about the history of thoracoplasty as it has been carried out at the University Hospital. The first operation was performed in 1925 by Dr. Howard L. Beye. The operation at that time consisted of the Wilms-Sauerbruch paravertebral type, in which short segments of eleven ribs were removed at several stages, beginning at the lower part of the chest. The operation was routinely preceded

by a permanent phrenic nerve paralysis. The operation was conceived as a method of diminishing the volume of the hemothorax, and putting the lung at partial rest. Incidentally, the first patient operated upon was recently interviewed. She had subsequently had a return to completely normal health, and has reared a family of two children. Because of the rigid requirements which the patients chosen for operation had to fulfill during these early years only five patients were operated upon in the first three years following its introduction. Gradually, however, the number of patients subjected to surgical therapy increased, and has continued to do so until at the present time we are doing approximately 125 thoracoplasties a year. The original operation was modified gradually during the years of 1933 and 1934, and in 1935 the modern posterolateral type of thoracoplasty was introduced. This anatomic change in the operation, from the old partial collapse involving the entire hemothorax to the modern selective complete collapse over the diseased area only, represents a change in the fundamental conception of how collapse therapy cures tuberculosis. This new conception is naturally reflected in the selection of patients for surgical therapy. In addition to the change in anatomic considerations the operative technic has been gradually refined, and in some instances altered. Silk has been substituted for catgut, and its use has been followed by considerably fewer wound infections. This factor is also reflected in the final results, since by eliminating postoperative wound infections the consecutive stages of the operation can be carried out in the desired time interval in a greater percentage of cases. As complications have been diminished in frequency of occurrence, through refinement in technic and improvement in postoperative care, there has been a distinct tendency toward accepting poorer surgical risks for thoracoplasty. This factor will also be reflected in the results obtained. Therefore, it must be kept in mind that this survey covers a wide variety of pathologic lesions, and that these varying lesions have been treated by an operation which has been in a more or less constant state of evolution.

Until July 1, 1939, a total of 146 cases have been referred to the University Hospital from Oakdale for thoracoplasty directed toward the collapse of pulmonary tuberculous lesions. An attempt has been made to follow up all of these cases. It was possible to get information concerning 132 or 91 per cent of the total operated cases. Of this group 101 patients are alive at the present time or 76 per cent of those whom

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we have been able to follow up. Forty-five patients have been operated upon five years ago or longer, and of these forty-five, thirty-one or 70 per cent are alive. The patients in this group were subjected to one of the several types of operation employed prior to the adoption of the modern posterolateral procedure, and represent a group who had a type of collapse somewhat less satisfactory than is now customarily achieved. Not all of these people who have survived five years or longer since the operation have a negative sputum at the present time; and since many of these people are not in a position to have satisfactory sputum examinations made we have not tried to determine the number of converted sputums in this group. Since we are not aware of the course of cavernous tuberculosis in our state in persons who are not treated by collapse therapy we have no available statistics with which to compare this figure. It does, however, compare quite favorably with the often quoted figures that from 60 to 80 per cent of all people who develop tuberculous cavities die within five years, if collapse therapy is not utilized.

The posterolateral thoracoplasty as it is now being carried out consists of a partial operation directed toward collapse of the diseased portion of the lung only. Beginning with the first rib sufficiently long segments are removed entirely to collapse the apical portion of the lung within which the cavity is situated. Usually it is possible to leave behind normally functioning lung tissue within the lower half or one-third of the involved side. In the majority of instances segments of seven ribs will have to be removed. The transverse processes corresponding to the resected ribs are also removed, since this gives an added degree of collapse which contributes materially to the chance of satisfactorily closing the cavity. The operation is done in several stages, removing either three and four ribs in two stages, or three, two and two ribs in three stages. By this means it is possible to reduce operative shock to such a degree that it is rarely encountered. Unless the patient has a large volume of sputum, approaching one hundred grams a day or more, we now routinely use nitrous oxide anesthesia, and it has been found entirely satisfactory in a series of several hundred cases. Until July 1, 1939, 81 patients have been subjected to this operation, and sixty-two or 75 per cent have had their sputum converted. This includes eight patients with tuberculous empyema who are now well. Eight patients have died since their operation; of these one apparently died from a cardiac failure after leaving the institution, two died from

a progressive bronchostenosis, and the remaining five apparently died from continued extension of their tuberculous lesions. Five patients have positive sputum at the present time; three of these have had reactivation of a tuberculous lesion in the contralateral lung, and two people have positive sputum apparently from a source beneath the thoracoplasty since no other tuberculous lesions are apparent on x-rays of the chest. Out of the entire group then of sixty-seven patients who survived there are two failures to cure because of remaining tuberculous lesions beneath the thoracoplasty.

In the total group of 146 patients who have been operated upon there have been thirteen operative deaths. This represents a case mortality rate of approximately nine per cent. There have, however, been 337 operations done on these patients and the operative mortality rate is, therefore, 3.8 per cent. In considering these figures it is necessary to say that the older operative procedures were responsible for more postoperative shock than we see at the present time, and the operative mortality rate has been distinctly lowered. We have at the present time a series of 181 consecutive operations without an operative death.

The results we have obtained are sufficiently good that we believe any patient who has a tuberculous cavity which is not closing spontaneously, and which cannot be closed by the lesser types of collapse therapy, must be considered as a candidate for thoracoplasty. The results are sufficiently good to indicate that the risk of sanatorium care plus surgery is less than the risk of sanatorium care alone. The contraindications to this form of therapy are constantly being lessened, and the patients who are being chosen for the operation represent an ever-enlarging group. In properly selected patients it carries a very low operative risk and can be recommended with confidence by the surgeon.

#### Discussion

**Dr. Jesse C. Painter, Dubuque:** My remarks will be very brief. I wish to emphasize some of the points which this excellent paper has brought out.

In checking over the number of people who have had thoracoplasty and have been under our service at Sunnycrest Sanatorium in Dubuque, we find that 90 per cent of those operated upon between 1925 and 1939 are still living. That is a much better morbidity rate than one could possibly expect, because the sputum in all instances was positive, and the lifetime is given as five years.

The second point is the anesthesia. I remember distinctly one patient who was operated upon about twelve years ago by one of the two or three best

surgeons in the United States at that time on thoracoplasty. They were doing it under local anesthesia, because they feared general anesthesia at that time in these cases. The nurse was taking his blood pressure, watching his pulse, and he heard her say, "I can't get his pulse." The patient was asked later, "What did you think?" He said, "I didn't know whether I was dead or not, but I just waited a little while. That is all I could do."

What had happened was that he had had a rather severe hemorrhage. Eventually the surgeon packed against the brachial plexus. The patient recovered with a wrist drop and some neurologic difficulty in his right hand. (This was some twelve years ago.) He eventually completely recovered, is now conducting a business, and his hand is completely recovered. Think of the mental reaction, the shock, and so forth, to this patient. What have we learned about the difference in anesthetics today? We have learned that the lesions which have become hardened and fibrosed by time and healing, even if there is considerable infection of the contralateral lung, will stand general anesthesia reasonably well without damage. This has made it possible for the surgeon to secure more relaxation, better exposure and much better results because of the technical difficulties which he avoids.

In the performance of extrapleural thoracoplasty the results obtained after the operation, allowing for 100 per cent perfection in the surgical technic, depend a great deal upon the selection of the patients for operation. In selecting a case we usually do so because we want to rid the patient of tubercle bacilli. The prime object, then, is to render this patient free from sputum or free from tubercle bacilli. The operation should be planned for the desired results. In other words, the selection of the patient is very important. If there is a fibrosed cavity in one upper lobe, with a clear lung on the other side, the decision is easy. However, sometimes the sputum will be positive and the lung on the contralateral side will be "burned over" pretty well; the question then is the desired result. This patient must be freed from tubercle bacilli, even if the operation lowers his vital capacity to the place where he cannot work as he did before, he will still be non-infective to other people and be able to live a reasonably good life. Therefore, the extent of the operation should be planned definitely, and if one is not sure the desired results can be accomplished, it is better not to operate.

When it is certain that other means, such as pneumothorax, are not going to be successful, one should not hesitate in performing a thoracoplasty in indicated cases, without a long period of waiting. There is a type of pneumothorax which will obtain the immediate goal of arresting the acute phase of the process. After the patient's resistance has been raised to the place where he can have a thoracoplasty, he should not be carried along week after week, and month after month, but a thoracoplasty should be done while he is in condition for such an operation.

## NONSPECIFIC LUNG DISEASE IN CHILDREN\*

CLINTON E. HARRIS, M.D., Grinnell

We are living in a period when the very air is rife with discoveries of epochal significance. It might very properly be called the golden age of medicine. At such a time the temptation is great to employ purple phrases touching the progress of medical science. However, a sober second thought reminds us that, by and large, our practice is still composed of a number of little things which demand our respectful attention. With such a prelude I am presenting three case reports of nonspecific lung disease in children. Not one of them is sensational in character, but each, I believe, teaches a lesson worth recording.

Case 1. A sturdy little colored boy, five years of age, was brought to the office by his grandmother. He was in fine spirits and obviously not very ill. The sole complaint was of cough and vomiting immediately following meals. He had had an acute respiratory infection and was still raising a fair quantity of purulent sputum. Physical examination showed nothing but a nasal discharge and a patch of moderately coarse râles in the left base. Very possibly he had a small area of unresolved bronchopneumonia. Appetite, digestion and sleep were normal. Since the cough reflex is easily elicited by eating or exercise he was placed on a regime of postural drainage with bed rest for half an hour before and after meals. No drugs were used. The vomiting was promptly controlled and his recovery was uneventful. Later examination showed no sinus disease, but his tonsils and adenoids were removed.

The ancient, classical meaning of the word "doctor" was "teacher". It is quite proper that patients be informed of the newer discoveries in medicine, and equally important that they understand the part played by hygienic treatment. I know of no better way to emphasize this factor than by omitting drugs when there is no clear indication for their use. Whether our portion be success or failure, inevitably we fall into one of two groups. We peddle pills or we teach. There is no middle ground.

Case 2. A boy, eight years of age, was brought to the office suffering with a widespread urticarial eruption with swollen eyelids and ears. He also complained of a dry, irritating cough. At no time did he raise sputum. His chest examination showed neither dulness nor râles. He had a slight fever. I believed he was suffering from two distinct complaints and told his mother that

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while his itching was distressing, we should be more concerned with the cold infection which I thought was developing. No history of allergy could be elicited. Two days later the mother returned with the patient and reported that he had had a very poor night due to the intolerable itching. Hospital treatment was accepted in order that we might better control the itching by administration of adrenalin as needed. He had a fair night but the following morning the nurse telephoned that he had been coughing constantly for half an hour. On physical examination a small area of impaired resonance and very faint râles were noted in the right anterior base. These findings were so slight that, by themselves, they might have been attributed to an overwrought imagination, but there was nothing indefinite about the lagging expansion at the right base. It then occurred to me for the first time that the cutaneous and respiratory symptoms had a common origin. A hypodermic of adrenalin was given. In five minutes the cough had ceased and the right base had returned to full expansion. In the absence of sputum I think it tenable to conclude that we were dealing with bronchial obstruction caused by angioneurotic edema.

While medical literature makes it clear that any soft tissue, including the brain, may be attacked by angioneurotic edema, so far as the respiratory tract is concerned most emphasis has been laid on the danger of edema of the glottis.<sup>1</sup> This may develop with such violence as to demand tracheotomy. Edema of the bronchi occurs in perhaps 20 per cent of the cases<sup>2</sup>. In 1934 Cole and Korn<sup>3</sup> reported a case of unquestioned allergy in a hypopituitary subject who developed a fatal lung disease. The x-ray findings were similar to those of tuberculous bronchopneumonia but no specific cause of death was found. In our own case there can be little doubt that the cutaneous and respiratory symptoms were from a common source. Failure to appreciate this fact at the first examination might have had disastrous results. This patient should have been kept under close observation until danger of respiratory complications had passed. While it is always possible for a patient to suffer from two or more diseases, it is generally prudent to account for symptoms and pathology on a unified, rather than a complex base.

Case 3. This patient, an infant four weeks of age, was seen through the courtesy of Dr. S. D. Porter of Grinnell. Both the birth and the puerperium had been normal. There had been no evidence of an infectious or inflammatory process and when first seen by me the nutritional state

was satisfactory. From the first the child exhibited a jerky type of respiration without stridor. A slight dry cough was noted. There was some interference with nursing and the patient could not rest comfortably on the left side. While breath sounds were clearly heard over the entire chest, examination plainly showed that the mediastinal structures had been definitely shifted to the left. There were no râles. A provisional diagnosis of congenital atelectasis was made and an x-ray of the chest was ordered. Since this seemed to confirm the clinical diagnosis the child was sent to a clinic in the hope that bronchoscopic treatment might prove helpful. There a clinical diagnosis of cystic lung disease was made but the roentgenologist considered it atelectasis. The child was sent home and its parents were advised that no special treatment was necessary. At the clinic the x-ray had located a hemivertebra at the level of the fifth dorsal spine. This tended to confirm the diagnosis of cystic disease which, I am advised, is often associated with other congenital defects. The same is frequently true of congenital atelectasis which may show serious neuromuscular lesions as associated or causative factors. Since cystic lung disease does not cause mediastinal displacement we still felt that atelectasis was the more tenable diagnosis. This was confirmed by Dr. Thomas A. Burcham of Des Moines, who submitted the following interpretation of the original film: "Film dated June 30, 1939, shows the heart to be displaced to the left with a dense homogeneous shadow in the left upper lobe having the appearance of an atelectasis. Superaeration of the entire right lung field. Film of July 17, 1939, shows the heart to be in a more normal position with slight clearing of the left upper lobe. The examination of October 3, 1939, shows normal aeration of the left upper lobe; the heart occupies a normal position. Normal aeration of the right lung." For financial reasons it was decided to keep the patient under observation and to postpone further consultation pending developments. The condition gradually improved and reexpansion was practically complete in eight weeks.

The bronchoscopic treatment of congenital atelectasis receives rather scant notice in some of the comparatively recent and well known texts on pediatrics. Griffith and Mitchell<sup>4</sup> suggest the use of carbon dioxide and oxygen, but make no mention of bronchoscopy, although its use is suggested in the acquired form of the disease. Grulee<sup>5</sup> states that the atelectatic lung provides a fertile field for pneumonia and serious lesions of the central nervous system. At the best, if



reexpansion fails, we may expect a carnified permanently crippled lung which is a common forerunner of bronchiectasis. Paterson and Farr<sup>6</sup> believe that the fetal lung is active in utero and that where respiratory function is poor, collapse may be induced by the organization of amniotic debris. Such cases, they contend, should be aspirated unless the patients respond promptly to more conservative treatment. Since normally the lung may not fully expand for several days in the newborn infant, it may properly be suggested that each patient should receive more than the usual routine chest examination immediately after birth. It will not do to assume that all chests will re-expand spontaneously if given time. It is the responsibility of the physician to determine whether full function has been, or is being, restored. The longer collapse persists the greater is the danger that permanent damage will be done. Every case of atelectasis should be considered obstructive in character unless proved otherwise. For mechanical conditions mechanical treatment is indicated.

One of my friends among the otolaryngologists advises me that he has found some pediatricians ultraconservative, and even fearful, regarding bronchoscopy in the newborn. The work of Chevalier Jackson<sup>7</sup> should give the proper answer to such timidity. We are prone to underestimate the capacity of our little patients to undergo operation. All surgery is a balancing of risks. In my opinion the risk of bronchoscopy in good hands is much less than that of a permanently collapsed lobe. It has been the invariable rule at the outset that new procedures in diagnosis or therapy are hedged about with numerous contraindications. As time passes many of these "verboten" sink into the limbo of obscurity. Only a few years ago pulmonary tuberculosis was an absolute contraindication to bronchoscopy. Today many institutions have taken up such treatment for tracheobronchial tuberculosis, and with definite benefit. It is salutary practice to explore new frontiers with caution until landmarks are well established; but there can be little that is constructive in a philosophy of fear. One who has seen numerous cases of suppurative lung disease realizes that the field of bronchoscopy should be extended rather than restricted. It has passed the experimental stage. Our fears to the contrary notwithstanding, we may confidently look forward to the time when obstructive atelectasis, in infants or adults, will be given the benefit of bronchoscopic consultation. What needs to be done will be done.

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## Discussion

**Dr. Eugene F. Van Epps, Clinton:** It has been my experience that the term ultraconservative more rightfully belongs to the otolaryngologist rather than to the pediatricist. Because of the much higher percentage of imperative tracheotomies following bronchoscopies performed on infants and children with acute respiratory disease, many otolaryngologists hesitate to bronchoscope infants and children for any disease process. That infants and children withstand such a procedure has been proved time and time again as has been mentioned.

Atelectasis is the father of bronchiectasis and should be so considered. The atelectasis of the newborn infant is not of an infectious nature. However, it is reprehensible to advise bronchoscopy for every case of atelectasis. Many of these chests will re-expand completely by conservative measures. Just how long one should use conservative methods before resorting to bronchoscopy has not been accurately determined. It seems wise, therefore, to treat these patients first by the usual conservative measures, following the clinical course closely with examinations and repeated x-ray films; if there has been no sign of reexpansion, the bronchoscopist should be consulted.

Atelectasis as part of the picture of a severe respiratory infection should be treated first by a tracheotomy if any edema or mechanical obstruction to breathing is found. This is then followed by either bronchoscopic drainages or by suction through a soft rubber catheter which has its tip intact. It may be necessary to use sterile normal saline to loosen the plug of mucus such as is seen in laryngo-tracheobronchitis. Suction should only be used after the tube has been in place and it may be continued as the tube is slowly withdrawn.

The plea for closer cooperation between otolaryngologist and pediatricist is timely. We should all work together for a better definition of the indications for or against bronchoscopy in both types of atelectasis.

County Committees on Medical Preparedness should be reported at once to  
T. F. Suchomel, M.D., Cedar Rapids, Iowa.

## OBSTRUCTION OF THE ABDOMINAL AORTA AND THE INFERIOR VENA CAVA DUE TO "SADDLE THROMBUS" AND TUMOR MASS RESPECTIVELY\*

### REPORT OF CASE

EDWARD S. BREWSTER, M.D., M.Sc. (Med.)  
Boone

Aortic thrombosis of the "saddle thrombus" type in which the thrombus "rides" the bifurcation and extends laterally and downward to occlude the common iliac arteries, is a pathologic curiosity. Obstruction of the inferior vena cava due to external pressure by a tumor mass is comparatively as rare. The two conditions, coexisting in the same individual, are without parallel in medical annals. Thrombosis of both the abdominal aorta and the inferior vena cava, however, was reported in 1936 by Bargen and Barker who described the clinical course and subsequent autopsy findings of a male twenty-six years of age who had been suffering from severe chronic ulcerative colitis of one year's duration. In their patient an extensive thrombosis was found which involved the femoral and common iliac arteries and the abdominal aorta to a level above the renal arteries which were also thrombosed. On the venous side, the femoral and common iliac veins, the inferior vena cava and the left renal vein were likewise thrombosed. In addition, renal infarction was observed, complete in the left kidney and partial in the right kidney.

A *Bacillus coli* pericarditis was discovered at postmortem examination which further enhances the unique nature of the author's case. A search of medical literature fails to reveal an account of a case with similar pathologic findings.

### CASE REPORT

H. B., a white male, sixty-seven years of age, was admitted to the Jewish Hospital, Philadelphia, Pennsylvania, on July 26, 1936, complaining of pain in and inability to move his legs. The admission diagnosis was paraplegia of the legs.

The leg pain began in the morning of July 26, after going to stool, and was associated with numbness of these parts. The pain, continuous in character, was located in the calves of both legs and gradually increased in severity, at the same time slowly progressing up the legs. Soon the power to move the legs was lost and by nine in the evening the pain had reached the hip regions, leaving the lower portions of the legs without sensation.

Three days previous to the onset of leg pain the

patient was seized with a sudden severe right upper quadrant pain which followed eating. This pain, sharp in character, radiated over the entire abdomen but not to the back, and was associated with the vomiting of a considerable amount of greenish material. The pain and nausea gradually decreased and had completely disappeared on July 26. The patient thought this was a "gallbladder attack," since he stated that he had gallbladder trouble some thirty years ago.

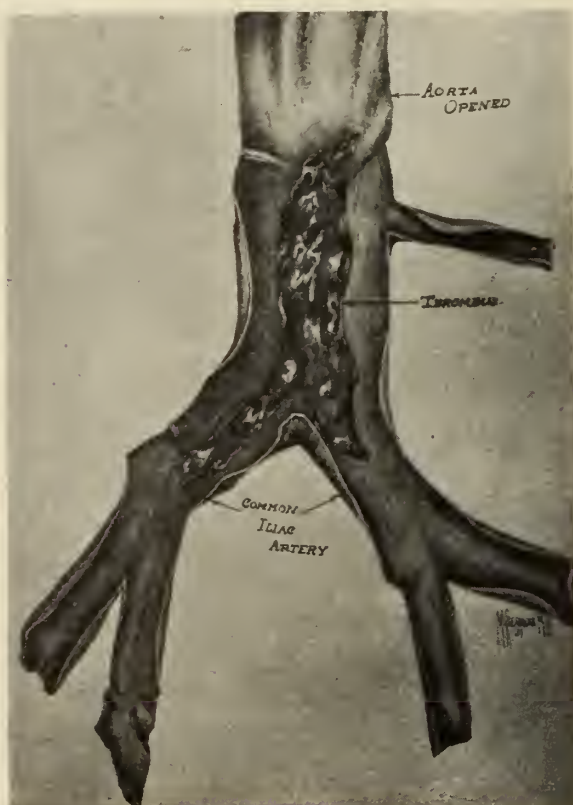


Fig. 1. Aorta incised to show position of saddle thrombus.

The patient's history revealed that during the winter of 1935, his legs and feet became very cold on exposure to cold weather and changed to a red-dish hue upon coming indoors. In March, 1936, he experienced a sharp pain in the right side of his head, face and right arm. This was preceded by nausea and vomiting. The arm felt numb, and soon became immovable. After a week, this had gradually improved and at the time of his present admission, the only sequel was a peculiar persistent tingling in his right hand.

*Physical Examination:* Examination revealed an elderly white male in bed apparently suffering considerable pain. Mottling of the skin over the upper portions of both thighs was marked. The skin was cold from the toes to a point eight inches

\*Abstract from thesis submitted to the Faculty of the Graduate School of Medicine of the University of Pennsylvania, in partial fulfillment of the requirements for the degree of Master of Medical Science (M. Sc. Med.) for graduate work in internal medicine.



above the knees. The positive findings were:

1. The apex beat of the heart was neither visible nor palpable and the heart sounds were muffled.

2. Crackling râles were heard at both lung bases.

3. A mass, the size of a small lemon, was palpated in the right upper quadrant. This mass was not tender.

4. Bilateral indirect inguinal herniae were present.

5. Both femoral arteries were pulseless.

6. Deep reflexes were absent in lower extremities.

7. Tactile, pain, and pressure sensations were lacking from the toes to a point eight inches above the knees.

8. He could only raise his legs with great difficulty. The condition was one of paresis and not paralysis of the lower extremities.

Several hours after hospital admission, the obstruction to the circulatory supply of the lower extremities was diagnosed as "saddle thrombus" of the abdominal aorta, and symptomatic and supportive treatment was started.

*Course:* Within a period of twelve hours after admission both lower extremities assumed a diffuse livid appearance to a point eight inches above both knees. This slowly encroached upon the remainder of the normal-appearing skin, reaching the upper third of the thigh within sixteen hours. The penis became swollen and livid; the bladder was distended and micturition could not voluntarily be performed. This necessitated catheterization. Oscillometric readings were zero in both lower extremities. The general condition of the patient was very poor, there being considerable lower abdominal pain and malaise. Because of the critically ill state of the patient, all laboratory work was withheld, with the exception of a urinalysis, which was done several hours before death. This showed many red blood cells. At this time, the ante mortem diagnosis of "saddle thrombus" of the abdominal aorta was strengthened, and it was thought that the aortic thrombus had progressed upward to involve the renal arteries. The patient became more toxic and died at 2:00 a. m., July 28, 1936, five days after the start of the abdominal pain and two days after the onset of the pain in both legs.

*Autopsy Report:* The body is that of an adult white male in a fair state of nutrition. Both lower extremities up to the inguinal regions are dark red and slightly edematous in contrast to a white pale body. Inguinal, axillary and cervical glands are not enlarged. There is a decreased amount of

subcutaneous fat. The muscles are somewhat atrophied. The pericardial sac contains about 50 cubic centimeters of turbid greenish white fluid. A postmortem smear and culture of this fluid showed the smear to be loaded with pus cells and the culture to be *Bacillus coli*.

The heart measures 11 by 9 by 4.5 centimeters, and weighs 350 grams. It is larger than normal, and shows some chronic dilatation. The left ventricle wall is 1.5 centimeters and the right ventricle wall is 0.5 centimeters, the aortic valve 8.5 centimeters, the mitral valve 10.0 centimeters, the pulmonic valve 9.0 centimeters, and the tricuspid valve 13.0 centimeters. The myocardium is moderately degenerated and the arch of the aorta is widened and shows a slight degree of atheroma. The thoracic aorta is slightly sclerotic. The coronary arteries are markedly sclerotic and atheromatous but do not show any evidence of acute occlusion. At the apex of the heart there is a grayish pink area of myocardium, the result of an old left coronary occlusion; the foramen ovale is closed; the valves appear normal; no thrombi or vegetations are present on the valvular or mural endocardium. The aorta is negative for lues.

The pleura appear normal. The lungs show moderate congestion at both bases and there is a healed tuberculous nodule at each apex. The pulmonary vessels are negative. The lungs grossly show no areas of consolidation or malignancy.

The abdominal cavity contains blood-tinged peritoneal fluid. Most of the small intestines are dark red and glistening. The superior mesenteric artery after it leaves the aorta is surrounded by lymph glands the size of large almonds which compress it. The inferior pancreaticoduodenal branch of the superior mesenteric artery is thrombosed and is sectioned to see whether a tumor thrombosis is present. Behind the transverse colon, to the right of the duodenum, and to the left of the gallbladder, but not attached to any viscus, is a large malignant gland the size of a large lemon, seven by six by four centimeters, pressing on the vena cava, and the right renal vein, so that both renal veins are markedly distended, two centimeters in diameter, worse on the left side, almost as wide in diameter as the vena cava itself. On the anterior surface of the duodenum nine centimeters from the pyloric orifice is a cauliflower shaped mass two by one and one-half by one-half centimeters which appears grossly malignant. This mass arises either in the duodenum or is a portion of a malignant mass which compresses and encroaches upon the duodenum from without. The second portion of the duodenum is markedly dilated. There is no obstruction to the free flow



of bile, since this mass is two centimeters away from the ampulla of Vater. The stomach is dilated. The inferior mesenteric artery shows a partial occlusion of the lumen by a thrombus. The renal arteries are not thrombosed.

Beginning six centimeters above the bifurcation of the aorta is a thrombus almost completely occluding the lumen of the aorta. This thrombus extends downward in a saddle-back shape into the upper two centimeters of the right common iliac artery and about one-half centimeter into the left common iliac artery. Both internal iliac arteries are markedly sclerotic and show thickened atheromatous areas with small ante mortem thrombi. The femoral arteries do not show any thrombi. These thrombi do not appear to be malignant upon gross examination.

No thrombi are seen in the inferior vena cava.

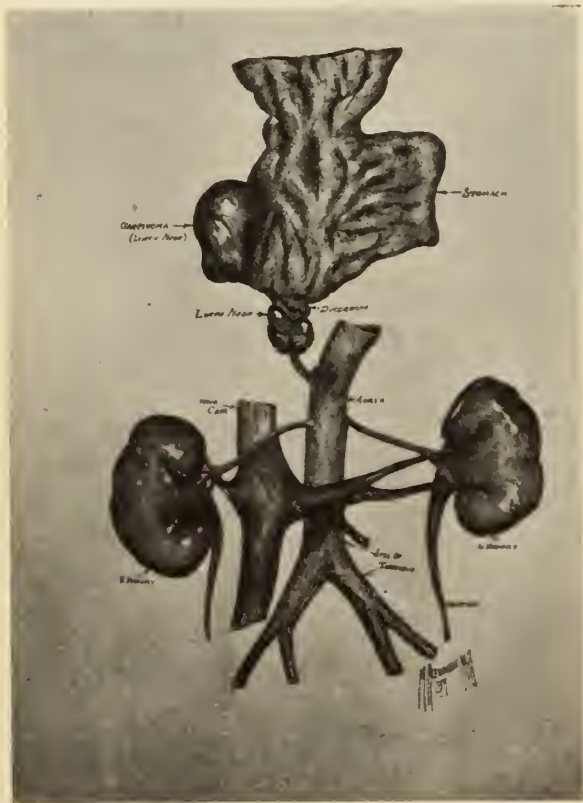


Fig. 2. Two malignant masses of lymph nodes are represented. Although this sketch conveys the impression that the larger mass arises from the gastric mucosa, actually this mass was not attached to any organ. This larger mass, the size of a lemon, compressed the inferior vena cava and right renal vein and caused the left renal vein to dilate to nearly the size of the inferior vena cava itself. The smaller mass of malignant lymph nodes was adherent to the duodenum. This mass infiltrated the anterior surface of the duodenum from without inward.

The dilatation is due to an enlarged mass of malignant lymph glands pressing on it. Probably only small pressure was exerted on the aorta by the enlarged renal veins, the thrombus not coming from

the heart but due to localized atherosclerosis of the aorta at the region of the bifurcation.

The spleen measures twelve by six by two and one-half centimeters and weighs 75 grams. It shows fibrosis and congestion. The adrenal glands appear normal. There are numerous hemorrhagic infarcts in the left kidney near the upper and lower poles. The rest of the kidney is congested. It measures ten and one-half by six by three centimeters. The right kidney is about the same size as the left and shows slight nephrosis and congestion. There are no infarcts and no evidence of malignancy. The ureters and urinary bladder show no pathology. The liver measures 23 by 19 by 6.5 centimeters and weighs 1,160 grams. It is congested and does not show any areas of malignancy. The pancreas is congested, does not show any malignancy, and is softer than normal.

*Anatomic Diagnoses:* The anatomic diagnoses were as follows:

1. Saddle thrombus of aorta and common iliac arteries secondary to localized atheromatous degeneration.
2. Carcinoma of duodenum (secondary involvement from without).
3. Parenchymatous degeneration of the heart.
4. Congestion of lungs, spleen, kidneys, liver and pancreas.
5. Recent infarcts of left kidney.
6. Suppurative pericarditis.
7. Thrombosis of the inferior pancreaticoduodenal branch of the superior mesenteric artery and of the inferior mesenteric artery. Complete occlusion in the former case and partial occlusion in the latter.
8. Obstruction of the inferior vena cava above the entry of the renal veins by a mass of enlarged lymph glands.

*Histologic Report:* Large cells showing mitosis with dark staining nuclear material are seen in the duodenum. They occur in greatest numbers in the muscular coat and serosa. There are a few occasional malignant cells in the crypts of Lieberkuhn. Adjacent lymph glands show many of the same types of cell, also containing red blood cells. Since the duodenum is involved from the serosa inward, it is secondary and not primary in the glandular portion. The lungs are congested and edematous at the bases. One portion of sectioned lung shows hemorrhagic infarction and malignant cells similar to those found in the duodenum. The heart shows parenchymatous degeneration.

The liver shows congestion and parenchymatous degeneration. The pancreas is congested. The kidneys are markedly congested. Chronic splenitis, congestion and chronic capsulitis are present.

The gastro-intestinal tract grossly did not show primary malignancy. The lymph glands in the upper abdomen were markedly enlarged, probably the result of secondary carcinoma (primary site undetermined) and the duodenum was involved from without inward. Since endothelioma of lymph glands in the latter stages resembles carcinoma histologically there is the possibility of primary malignancy in these abdominal lymph glands. The enlarged lymph glands produced external pressure on the vena cava above the renal veins to obstruct venous return to the heart, but not on the aorta and was not the cause of the saddle thrombus. The enlarged lymph glands produced external pressure on the inferior vena cava above the entry of the renal veins so as to obstruct venous return to the heart. These enlarged lymph glands did not exert any pressure on the abdominal aorta and hence played no part in the formation of the saddle thrombus. This thrombosis originated upon an area of sclerotic aortic intima several centimeters above the bifurcation.

#### COMMENTS

The diagnosis of saddle thrombosis of the abdominal aorta was made clinically in this case and was confirmed later by postmortem examination. An abdominal mass was palpated at the time of the physical examination of the patient but its nature was unsuspected until autopsy investigation. The condition of suppurative pericarditis was missed altogether in this individual even though the apex beat was neither visible nor palpable and the heart sounds were muffled. These findings were thought to be due to early cardiac decompensation and the presence of crackling râles at both lung bases seemed to confirm this diagnosis.

#### SUMMARY

1. The ante mortem diagnosis of saddle thrombus of the abdominal aorta later confirmed by autopsy examination is described in a white male, sixty-seven years of age.
2. The inferior vena cava above the level of the renal veins in this individual was obstructed by an enlarged mass of malignant lymph glands.
3. The primary site of this malignancy was undetermined.
4. A *Bacillus coli* pericarditis was also present in this case although the condition was clinically overlooked.

#### REFERENCE

1. Bargen, J. A., and Barker, N. W.: Extensive arterial and venous thrombosis complicating chronic ulcerative colitis. *Arch. Int. Med.*, lviii:17-31 (July) 1936.

## GALLBLADDER DISEASE AND ITS COMPLICATIONS\*

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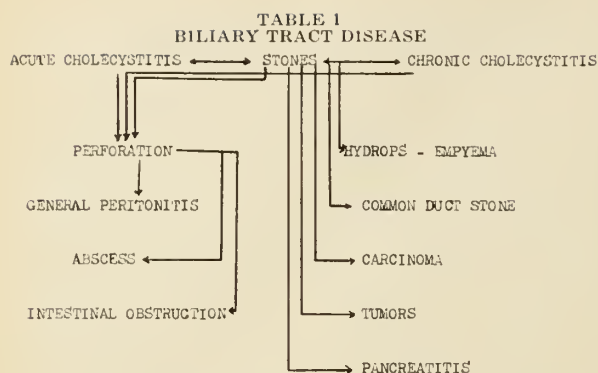
The content of this paper is an attempt at rationalization of the management of biliary tract disease. It is a resumé of some of the important aspects of gallbladder affections viewed as a primary disease, with the secondary manifestations looked upon as complications as the subject indicates. In the strict sense this viewpoint undoubtedly seems illogical to the physiologist, the chemist, the pathologist, and incidentally the clinical physician. Biliary tract disease in the newborn infant is unheard of except as the result of malformations or congenital defects. A considerable percentage of biliary tracts are normal in a large series of postmortem examinations of individuals past sixty years of age. Those which are diseased become so because of conditions for the most part entirely foreign to the structures under consideration, the extrahepatic biliary system. Whether the affection is due to typhoid or some other infectious fever, during which bacteria from the blood stream enter the gallbladder in the bile or directly into the wall by way of the cystic artery; ascending infection entering this viscus from the duodenum; reflux of pancreatic secretions into the gallbladder; disturbances affecting cholesterol or bilirubin metabolism, such as may occur in pregnancy or hemolytic icterus; or remote infections reaching the gallbladder through the lymphatic channels, some such condition is responsible for the biliary tract disease.

To discuss<sup>\*</sup> biliary tract diseases as primary gallbladder disease and its complications is not the accepted idea, yet one finds much justification in this viewpoint. When the clinical manifestations only are considered, it is apparent that the evidence of biliary tract disease as a rule appears independently of causative factors as to time. Neither can one forecast that clinical manifestations will follow any of the known causes or even that the biliary tract, in individual cases, is affected because of some specific past possible etiology. The gallbladder is diseased if any part of the biliary tract is affected and if normal the remainder of the tract is normal, facts which hold with few exceptions. The gallbladder, more than any other structure making up the biliary tract, is the mischief maker.

The classification adopted for this discussion is my own. (Table 1) It is utilized in an attempt for clarity rather than for complete consistency.

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The primary diseases of the gallbladder are acute and chronic cholecystitis with or without stones. The complications to be discussed are those denoted in the diagram below the primary diseases. A study of this outline reveals one feature dominating all others in importance. Stones are involved in and actually are in the main responsible for all complications. This point is emphasized now as well as throughout the discussion for it has an important influence on the viewpoint of the surgeon. It must not be construed that the surgeon believes all individuals presenting symptoms originating in a diseased biliary tract should be treated surgically. It is known that many can be satisfactorily relieved by conservative measures. However, for every patient having symptoms from an obvious biliary tract disease where stones are proved by x-ray or may be logically presumed because of the character of the symptoms, surgery should be urged promptly. When such a policy is adhered to not only will the incidence of complications be materially lessened but with the disease limited to the gallbladder a minimum mortality and morbidity rate will result.

*Chronic Cholecystitis* is a laboratory, not a clinical diagnosis. The essentials are a varying degree of thickening by fibrosis replacing areas of necrosis in any or all layers. The mucosa may show the greatest change due to adherent masses of cholesterol crystals giving the gross picture of the so-called "strawberry gallbladder", or the muscular or serosal or all layers may be extensively scarred and thickened. These changes are the result of infectious, chemical, circulatory or some other factor or combination of factors. Stones may or may not be found in the lumen.

There may or may not be symptoms. If symptoms are associated with this pathologic entity they are likely to be of the dyspeptic variety in which food dyscrasias, gaseous distention and indefinite discomfort predominate. Definite colic may, however, be a feature, either present or past. The diagnosis is made not by the cholecystogram but by the ruling out of other conditions

which may produce similar symptoms. Of these peptic ulcer, constipation and diseases of the spine, renal tract or even the heart are the most common offenders.

At this point we wish to stress the fallacy of making a clinical diagnosis of chronic cholecystitis. It is true that in many instances exploration reveals the disease to be chronic and limited to the gallbladder, but many of the complications discussed later, even including common duct stones, may be uncovered at operation. A chronic inflammatory condition involving the gallbladder only tends to produce a limited symptomatology, but those same symptoms are frequently described by patients whose biliary tract is extensively affected.

The surgical treatment of chronic cholecystitis is cholecystectomy. The prognosis cannot be classed as good. The reasons are not that pathology is lacking, but because in many instances the gallbladder is not responsible for the symptoms, and complications are not recognized at operation.

*Acute Cholecystitis* in its true sense refers to the histologic evidence of an acute inflammation involving the gallbladder wall. Clinically the term is used to designate that group whose symptoms are of an acute infection and of such a character that one may presume involvement only of the gallbladder portion of the biliary tract. These symptoms are usually fever, leukocytosis, tenderness and pain, the latter often as severe as colic, although frequently the onset is more gradual and the duration is more prolonged. The location of the pain and tenderness is usually characteristic although other conditions, such as a perforated peptic ulcer or acute pancreatitis, may be confusing in the beginning.

The clinical diagnosis is more often correct than is that of chronic cholecystitis. However, complications are more frequently associated with acute gallbladder disease although they are no more obvious clinically.

Stones are not essential in the pathology of acute cholecystitis, although they are more likely present than not. In a strict sense they do not contribute to the pathology of this condition except insofar as they may increase the likelihood of active bacteria in the lumen, but actually the great majority of cases clinically diagnosed as acute cholecystitis have had at least temporary closure of the cystic duct by a stone.

The treatment of acute cholecystitis is the removal of the gallbladder. There are instances when simple removal of stones and drainage may be the procedure of choice. Poor general condition of the patient and unusually difficult techni-



cal problems are the principal justifications for the exception.

It is not the province of this paper to attempt establishment of the optimum time for surgery. In general, however, there is much to be said for surgery in the early hours of an acute attack. It may obviate the occasional occurrence of perforation; it makes for an earlier recognition of an occasional acute pancreatitis or perforation of a peptic ulcer, both often difficult of differentiation in the early stage and both showing a better prognosis if operated upon promptly. It precludes a shorter convalescence and the mortality rate is no greater than if done later.

In our clinic surgery of acute cholecystitis is rarely done because of scarcity of cases, particularly in the first twenty-four hours when surgery is safest and most logically advised. Even so, when the case has been diagnosed and the condition is progressing at the end of twenty-four to thirty-six hours it is safest to open the abdomen. If as many as three days have elapsed surgery is preferably delayed until the condition has completely subsided since the mortality rate is undoubtedly higher in the early days of resolution. There are necessarily exceptions to this rule especially when a continued progression of the disease is of greater jeopardy than surgery. The above conclusions are based largely on many cases treated after the subsidence of all symptoms of an acute episode when dense vascularizing adhesions with loss of cleavage lines and friable adjacent viscera are often uncovered.

*Gall Stones.* In this discussion nothing will be said as to the reason for or the nature of gall stones. It is sufficient to indicate that gall stones are common associates of diseased gallbladders and incidentally are directly or indirectly responsible for practically all conditions reasonably considered complications of the disease. It is an interesting observation that when the results of surgery on the biliary tract are determined, the presence of stones makes for a better prognosis than following surgery of the stoneless gallbladder. This is true in spite of the more common complications. The logical reason seems to be that the frequent association of colic among the symptoms of those having gall stones increases the frequency of correct diagnoses, and earlier treatment is sought by the patient.

#### COMPLICATIONS OF GALLBLADDER DISEASE

*Hydrops and Empyema* are the direct result of persistent obstruction due almost always to impaction of a stone in either the ampulla (the usual) or the cystic duct. In both conditions the onset is with severe pain which does not subside

after one or two morphine hypodermics. In both there is an accumulation of fluid under tension. In both the pathology is classically within the lumen rather than in the wall. Differentiation clinically may be possible in the subsiding stage of the attack but acute cholecystitis is often diagnosed as empyema and vice versa. With hydrops, mild symptoms of inflammation are the rule in the early period only, whereas empyema often remains tender and painful for weeks or until treated surgically. We have seen at least one case in which a painless, tenderless hydrops remained symptomless, except for the mass, for at least eight months before it was removed. Clear fluid is found in the hydroptic gallbladder, pus in an empyema. Perforation is rare in the former but always a possibility in the latter, because of the combination of pressure due to a stone plus infection. Actually, from the clinical standpoint, empyema in its true form is seen as often in a chronically diseased gallbladder as in an acute one. The treatment of hydrops and empyema is cholecystectomy. The prognosis is excellent for both recovery and cure if uncomplicated.

*Perforation of the Gallbladder* is a serious hazard to the welfare of the patient. Fortunately, preformed adhesions about the viscus usually determine a localization of the escaped material. Such conditions are found almost invariably in patients who give a history of a recent prolonged acute attack. Except that this complication must be suspected in all patients whose recovery from a severe episode has been slow, a diagnosis is not often made preoperatively. Since most of the perforations occur about the fundus the overlying indurated omentum may be palpable, and if present, provides the most suggestive sign of this complication. However, even if a palpable mass is accompanied by fever, leukocytosis and tenderness, an infection limited to the gallbladder is still a possibility. Treatment consists of cholecystectomy and drainage of the operative site. The latter is mentioned at this point merely for emphasis. It is rare that a tight closure of the abdomen is permitted following any operation done on the biliary tract. The prognosis is good with recovery although the mortality rate is considerably higher than that accompanying the removal of an uncomplicated gallbladder.

*Free Perforations* are fortunately rare. They are associated with an acute gallbladder episode, unless due to trauma, and the uncommon instance of leakage not due to stones is the result of gangrene of the wall. An early clinical diagnosis is rare, although the condition must be suspected if severe right upper quadrant pain, which has con-

tinued for twelve hours or more, suddenly subsides. The late symptoms of generalized peritoneal irritation, shifting dullness, jaundice and apathy are diagnostic but surgery at this stage is rarely successful. The possibility of such a complication can be avoided if immediate surgery is done in all acute cases, although the infrequency of the complication does not in itself justify this recommendation.

*Perforation into hollow viscera* has been seen frequently in this clinic, certainly more commonly than the reported average incidence of one per cent. A recent review of thirty case records from the files showed the duodenum to be involved in all but two instances, in which the colon and stomach were each affected once. Communication is almost always with the gallbladder although occasionally the common duct is perforated. In one case there was a communicating tract between a reformed gallbladder and the duodenum. It is probable that stones are essential to the formation of all such internal fistulae, the perforation occurring through previously formed adhesions. Possibly some communications heal spontaneously. Many are minute when disclosed upon separation of the gallbladder from the duodenum. In fact some are so small as to be easily overlooked if a careful search with a probe is not made. There is usually nothing in the history or findings which will permit of a preoperative diagnosis. A few outstanding features interpreted from our studies indicate:

1. All patients had had repeated attacks of colic for a period averaging twelve years and several between twenty and thirty years.
2. The attacks tended to be unusually severe and prolonged.
3. The operative mortality was high, over twenty per cent.
4. Sudden subsidence of acute pain was rarely observed.
5. Gall stones in the stools were extremely rare. Even so, such evidence would not exclude the possibility of passage into the bowel by way of the common duct.

*Acute Intestinal Obstruction* has occurred in our series of cases in eleven recognized instances, due to the entrance of one or more large gall stones into the intestinal tract, probably through a perforation in the duodenal wall. This complication, although often mentioned, has not, we believe, been adequately stressed. The diagnosis is rarely easy. Although the symptoms are of an intestinal obstruction they do not often suggest the complete occlusion invariably produced by stones. The atypical symptoms probably result from the

occasional forward movement of the stone temporarily relieving the tension in the bowel, and the symptoms. This factor of seeming relief has given false security and has prompted delay in surgical treatment in some of our early patients who suddenly collapsed and died while under observation. More recently such tragedies have been avoided principally because of the emphasis made in the instructions to the house staff. The most recent case was diagnosed and promptly treated successfully by the resident surgeon. In four other instances the condition was correctly diagnosed or strongly suspected before operation. Even so, the diagnosis is hardly justified in the absence of previous or associated gallbladder symptomatology such as has been true in some of the cases. The use of the x-ray is emphasized as being of possible value in disclosing a radio-opaque stone or one producing a filling defect meniscus in a gas shadow. The treatment is prompt exploration and removal of the stone from the bowel. An attempt to milk the stone into the cecum is justified but the procedure should immediately be abandoned unless the stone moves freely. It was accomplished in one of our cases but with an injury to the bowel resulting in a subsequent perforation and a fecal fistula. The mortality rate should be less than the 54 per cent in our series.

*Passage of Gall Stones into the Common Duct.* The most common of the serious complications of gallbladder disease is the passage of gall stones into the common duct. In general one can say that this complication is characterized by an acute attack of pain, usually colicky in type, plus jaundice. Such a syndrome almost invariably means a common duct stone. It must be emphasized, however, that the lack of jaundice after an acute attack does not rule out this complication. Jaundice is associated with stones in the common duct only when obstruction of the duct occurs to the degree or sufficiently long that an excess of bilirubin accumulates in the blood. It is evident that a small stone may produce no obstruction. Not so commonly understood, but nonetheless true, is the fact that large stones in the common duct may cause no jaundice. It is an inviolable rule in this clinic that no surgery is done on any portion of the biliary tract until a thorough investigation of the common and hepatic ducts has been made. A gallbladder is never removed before the common duct has been not only carefully palpated but actually exposed and observed. Lahey was one of the first to emphasize the frequency of overlooked stones in the common duct during "gallbladder surgery". He was of the first to ex-



tend the indications for opening the common duct for internal exploration and to report that as a result the incidence of proved duct stones had been almost doubled. Such has been our experience. The following are the indications for opening the common duct as taught to the resident staff and undergraduates:

1. A palpable stone in the common or hepatic duct.
2. The presence or history of jaundice.
3. A thickened, inflamed or opaque duct wall.
4. A dilated common duct.
5. A dilated cystic duct.
6. The presence or history of chills and fever.

Obviously in order to determine all of the above factors, the common duct wall must be exposed. This provides an additional important advantage; the ducts are located and identified. Since this procedure has become compulsory only two instances of division of the common duct have occurred and in both the rule had been violated.

After opening the common duct all stones should be removed. This often requires much time and patience. Suction applied through a rubber tube inserted into the duct may be helpful in removing stones in the hepatic or liver ducts. The ampulla should be probed for patency and dilated if strictured. All mucus, bile mud and blood clots must be removed by flushing the ducts with an adequate amount of sterile water, removing it with suction as it escapes from the duct opening. A T tube is accurately inserted and the incision tightly closed. Water is then injected through the tube to demonstrate the tightness of the closure and the patency of the ampulla.

As a rule, the gallbladder is removed, because in most instances of common duct stone the gallbladder is markedly diseased. If the gallbladder wall is not badly diseased and especially if there is concern over a possible stricture of the duct, a cholecystostomy may be done. In our experience a stricture at the site of choledochostomy is rare and its possibility as a cause for future trouble is far less likely than is a drained gallbladder. Drainage of the common duct by a T tube provides the optimum advantage to the patient followed choledochotomy. A relatively small tube can be used and such is normally recommended. It does not obstruct the direct flow of bile from the liver to the duodenum. It provides a means of flushing the duct if this is considered necessary, as well as an avenue for the administration of fluids.

The time for the removal of the tube is based on several factors, of which the duration post-operatively is probably the least important. It

is true that the majority are removed during the third week but in exceptional cases it may be left in place for months. Marked dilatation of the common duct is one factor which prompts a delay in the removal of the tube. Definite infection of the duct is another indication for prolonged drainage and in both daily irrigation of the duct with a sterile normal saline solution may prevent an accumulation of solids.

In the average case with an uncomplicated course and an early clearing of the bile, the tube which carries the bile from the T tube to the bottle on the floor is raised about six inches above the level of the anterior abdominal wall on the tenth to the fourteenth day. If no symptoms follow, the level is increased each day until no bile drains from the tube. When no drainage has occurred for from two to four days and the patient's course has been unaffected, one may presume an immediate closure of the wound after removal of the duct. One other measure of precaution is advocated and is done routinely in this clinic before removal of the tube. Under the fluoroscope the common duct is visualized by injection of lipiodol to determine the ready passage of the dye into the duodenum, and immediately films are exposed to permit more detailed study of the extra- as well as intrahepatic ducts. The advantages are that excess dilatation of ducts can be determined and stones overlooked at operation may be detected.

It seems conclusive that greatly dilated ducts preclude a greater likelihood of stone formation due to stasis of bile and an increased likelihood of infection. Such patients are sent home with the T tube closed and are instructed to inject a pint of cooled boiled water through the tube each day. In two to four months another roentgen ray film will often show little dilatation of the duct and the tube can then be removed with relative safety.

In a discussion of biliary tract diseases one cannot avoid at least a brief reference to the markedly increased tendency to bleed in those with obstructive jaundice. The etiology of the jaundice is not material. The presence of jaundice is of only relative material importance. The bleeding tendency occurs when no bile enters the enteric tract. All who have been active in the surgical treatment of biliary tract disease for many years often look back with dread to the futile effort made to control the often fatal bleeding. Recollections are vivid of frantic administrations of any drug or material ever recommended to overcome a delayed clotting time of blood. Little justification was found for confidence in any substance until Vitamin K was

brought to our attention. The victims of this malady owe much to our Dr. H. P. Smith who was the first to suggest its use to us. No case in our or any series can show a more miraculous change than the first one, a lady, deeply jaundiced for several weeks, and bleeding from gums and intestinal tract as well as extensively beneath the skin. The extract from a pound of dry alfalfa, two ounces of sticky, musty smelling residue, laboriously obtained over a Bunsen burned by Dr. Smith, was provided. It was anything but palatable, but each succeeding alfalfa cocktail was taken with relish when, after twenty-four hours, the bleeding stopped and her appetite improved. She was operated upon a few days later with no more bleeding or reaction than an average unjaundiced patient. Vitamin K is now as refined as aspirin and is given with even more confidence in its effect. It must be given with whole bile or bile salts to obtain the optimum result. This combination should be administered until the prothrombin level is raised to 80 per cent or above if such can be accomplished. To avoid possible recurrence of bleeding it should also be administered postoperatively until an adequate diet can be given, and a normal flow of bile into the intestinal tract occurs.

*Tumors of the Gallbladder and Ducts* may logically be included as complications.

*Benign papillomas* are occasionally found. They are not, as the term would imply, a true neoplasm such as may be found in the urinary bladder or intestine. They are essentially the result of hyperplasia of the mucosal villi, sometimes accounted for by a deposition of cholesterol in the mucosa, easily detected grossly and proved by histologic sections.

*Adenomas* are rare and of little clinical significance. Most of them are incidental findings. One patient seen about three years ago with suggestive gallbladder symptoms showed no abnormality in the cholecystogram. A cholecystectomy was later done elsewhere when exploration revealed an adenoma in the fundus. We occasionally see her now with symptoms exactly as those discovered at the original consultation.

*Sarcomas* are rare and not often recognized except by biopsy or necropsy.

*Primary Carcinoma* of the biliary tract makes up about four to six per cent of all carcinomas. It is rare in the absence of stones. The latter, therefore, probably are causative. The incidence of carcinoma in patients with cholelithiasis is variously reported up to eight or nine per cent when involving the gallbladder. The diagnosis is rarely made preoperatively unless it has progressed to

an inoperable state. As a rule, the early symptoms are mild and not significant. Jaundice is a late symptom. When involving the extrahepatic ducts, stones are also usually found but the relative incidence of carcinoma is less than in the gallbladder. The malignancy may originate in any portion of the ducts but the most common site is in the ampulla of Vater. The earliest and most consistent symptom is the insidious onset of jaundice which progresses, with the early appearance of acholic stools. Pain is rarely pronounced, often absent. A clinical differentiation from obstruction due to a stone is often difficult, especially if there is a history of previous colic. An associated palpably enlarged gallbladder almost certainly means a malignancy. It is usually impossible to differentiate an ampullar carcinoma from one arising in the head of the pancreas unless x-rays show a filling defect in the duodenal lumen or an extrinsic displacement of the duodenal shadow. A carcinoma of the ampulla should be removed if it is limited to the wall and if the patient is relatively young and in good general condition. The mortality rate is high at best, but any palliative procedure, though often justified to relieve itching and to improve the appetite and digestion, will rarely prolong life beyond a year.

*Pancreatitis* is justifiably linked closely with infections of the biliary tract. Possibly the usual common outlet of the major pancreatic and bile ducts is responsible. Such is not always true, however, for we have seen at least one instance of fatal acute pancreatitis in which both pancreatic ducts entered the duodenum separate from the biliary duct, and the biliary tract was normal. In spite of this it cannot be denied that in practically every instance of pancreatitis the biliary tract is diseased. Chronic pancreatitis is a not uncommon finding during operative procedures on the biliary tract. This discovery is probably not of great importance except that it establishes the fact in the record. Active treatment aimed at this condition is only occasionally necessary. Eradication of biliary tract disease as a rule relieves the symptoms of pancreatitis if such had occurred. Exception to the latter is sufficient swelling of the pancreatic head to cause constriction of the common duct and resultant jaundice. Even this condition usually demands surgical attack on the common duct, in some instances consisting of mechanical dilatation of the duct and insertion of one limb of the T tube through the constricted portion. Acute pancreatitis is a serious complication. The onset of symptoms, usually interpreted as gall stone colic, in the more



severe instances rapidly progresses to a state of severe shock within twenty-four hours. Early surgery offers the best chance for recovery. Usually one finds a considerable amount of flaky greenish fluid in the abdomen and a varying amount of fat necrosis most pronounced in the region of the pancreas. The latter gland is enlarged, hyperemic and in the more severe states shows necrosis. Drainage of the necrotic areas or at least of the lesser abdominal cavity is indicated although this should be supplemented by drainage of the biliary tract. The mortality rate is high.

*Strictures* of the extrahepatic ducts should be rare and actually are not a frequent complication. Most of them are the result of unrecognized injury during an operative procedure. They are extremely rare at the site of choledochostomy. The treatment is most unsatisfactory, both because of the hazard and the tendency to recur. Some type of plastic repair or transplant of the duct has been the usual attempted method. We have utilized the procedure recently described by Wilson in five cases with one death. Sufficient time has not elapsed to pass final judgment but we believe it has distinct advantages in selected cases.

*Postoperative ventral herniae* are the most common of the operative complications. The type of incision probably plays little, if any, part in the frequency of the occurrence of a hernia provided a midline incision is avoided. If either a high rectus or a subcostal incision is considered advantageous over the other for any reason, it is not that postoperative herniation can be avoided by either. With any incision extreme care in closure must be observed. The probable major reasons for herniations are drainage material passing through the incision and infection, or both, infection being much more likely if the operative wound is not tightly closed. By preference all drainage material, including the T tube, is brought out through a stab well away from the primary incision, a factor which will contribute toward a minimal number of herniae.

*Reformed Gallbladder* or dilated cystic duct following removal of the gallbladder has provided the necessity for re-operation in approximately twenty cases of our series. It can occur naturally only in those instances of distal division of the cystic duct or across the ampulla as has evidently been done in some instances. In many, stones have formed; in all, residual thickening of the wall with marked "pericholecystic" adhesions has been demonstrated. In one instance a perforation into the duodenum with a patent fistula was disclosed. In several instances stones in the common duct had evidently originated in the reformed gallbladder. Only one

such condition has been found in patients originally treated in this clinic, which would seem further to bear out the claim that complete visualization of the ducts before division of the cystic duct is necessary for adequate and safe surgery.

#### SUMMARY

1. From the clinical viewpoint biliary tract disease originates in the gallbladder.

2. Disease limited to the gallbladder is effectively cured by cholecystectomy.

3. Gall stones usually originate in the gallbladder and are essentially responsible for most of the important complications.

4. Complications increase the hazard and morbidity because:

- a. The extension of pathology to essential anatomic structures cannot always be relieved by optimum treatment.

- b. There is an increase in the technical difficulties.

5. Conservative treatment is justified, at least temporarily:

- a. When symptoms or cholecystogram or both indicate no stones to be present.

- b. When the symptoms are of dyspepsia.

6. Any patient with acute attacks requiring sedation for relief and proved to be due to biliary tract disease should have the proper surgical treatment at the earliest possible date.

#### Discussion

Dr. L. C. Kern, Waverly: I have read this paper very carefully, and I am unable to find anything to criticize in the author's conclusions. Personally it is a great pleasure to me to add a few comments at this time. I have had the benefit of seeing Dr. Peterson in his work in the University Hospital, and have heard him discuss this subject on several occasions.

It so happens that Dr. Peterson and I were graduated from the same institution. As I read his masterful paper, and thought of his personal experience as a surgeon in this particular subject, I could not help but marvel at the progress which our profession has made in the span of years since I sat in the clinics of the late beloved Dr. Middleton in the same college. It is worth recording that in the years 1892 to 1895 inclusive, I cannot recall a case of gallbladder surgery. Truly surgery has gone a long way since those days.

In the *American Journal of Surgery*, Dr. Richard Hotz, of the Postgraduate Hospital of New York, says, "Since the first successful operation for gall stones reported by Dr. Bobbs in the June 15 issue of the *Indiana State Journal of Medical Sciences*, and the first successful cholecystectomy by Langenbuch, in 1882, the progress made in the surgical diseases of the biliary tract has been phenomenal." Dr. Frank H. Lahey of Boston says we are now in

the third era of gallbladder surgery. The first was removal of stones from the gallbladder; the second was removal of the gallbladder and the stones; and the third is the examination of the hepatic ducts, common duct, removal of stones if present, drainage of the ducts and dilatation of any stricture present. However, my memory goes back a bit farther, to the time when no surgery was done and only medical treatment was in order. Dr. Peterson and Dr. Lahey have pointed out a serious defect in past surgery, and this explains why we were not satisfied with biliary tract surgery in the not too long past. How many times all of you have had the patient complain about the same or perhaps more serious complaint after surgery only to find that stones in the ducts had been overlooked.

In reading the author's paper I was impressed with the fact that I was reading the product of a teacher of surgery. Why? Because he has so well classified his remarks that one can follow him in conclusions, and best of all remember what he had to say. His classification is simple but adequate and comprehensive. After all is said and done the whole subject boils down to the necessity of a correct diagnosis. At this point may I stress the importance of getting and recording the best and most complete history of the case that you are able to get. Do this before you think of the laboratory tests, the blood counts and the x-ray films of the gallbladder. If you do this you will think the matter through logically and avoid many serious errors.

As Dr. Peterson has pointed out if you have an acute cholecystitis, think of appendicitis, perforated duodenal ulcer, heart disease, mesenteric thrombosis, kidney stones and pleurisy. The chronic type is not so easy to diagnose. However, since 1924, when the Graham-Cole dye test as now used was made available, we have gone a long way toward solving this subject.

In 1916 I read a paper before the Austin Flint-Cedar Valley Medical Society with the title, "A Plea for the Early Diagnosis and Surgical Treatment of Gallbladder Disease." My reason for writing this paper was an experience in 1915 when in my practice in a period of nine months, I saw three cases of carcinoma of the gallbladder and liver. All the patients were operated upon and in less than a year all were dead. When I was asked to discuss this paper today, I went back and read again my own paper, to see if my conclusions of today were in any important way different than those expressed twenty-four years ago. We must remember that the literature of those days was very meager when compared to the voluminous literature of today. We know that more progress has been made in the past twenty-five years than in the previous one hundred years. It was my conclusion in 1916 that stones played a large part in causation of cancer in the gallbladder; so I was pleased to read in Dr. Peterson's paper "Primary carcinoma is not uncommon, and makes up about four to six per cent of all carcinomas. It is rare in the absence of stones, the latter

probably therefore being responsible." He was speaking of the gallbladder.

Another subject not yet settled is when to operate in acute cholecystitis. I get the impression that the author would operate within the first twelve to forty-eight hours after a diagnosis had been made, all other conditions being favorable for surgery; and I agree.

Will you always remove the gallbladder? The answer depends upon several factors. At first no one did it; then it became the fashion for all to do it, or at least attempt to do so. In some cases I have left the gallbladder purposely, and I was very much delighted several times, when for some reason the common duct, by infection or possible injury, was not functioning, and could not be repaired; I could unite the gallbladder with the duodenum or to the stomach.

Dr. Peterson has given us a very detailed and helpful summary of the complications of gallbladder surgery, and the best way to handle them. How may we help ourselves to avoid some of them? First, by a correct diagnosis; second, by proper pre-operative preparation; third, by carrying out the proper surgical procedure; and then by using the many new methods of postoperative care, which he has so well suggested to you.

This brings me to say that when in Iowa City some years ago, Dr. Peterson was the first to bring to my attention Vitamin K. As he said, he made it from alfalfa; this was later made available by Dr. Smith and others. Another "trick" from Peterson is to have the Wangenstein apparatus placed before the patient is out from under the anesthetic. This is of the utmost importance in my judgment. The giving of the patient's own bile in drainage cases is another factor which I have learned from Dr. Peterson. With all of these improved methods, many of them developed in the work at our University, gallbladder surgery "ain't what it used to be."

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## ACUTE SURGICAL CONDITIONS IN THE ABDOMEN AND THEIR TREATMENT\*

A. Q. JOHNSON, M.D., Sioux City

The literature on the subject of acute surgical conditions in the abdomen and their treatment is abundantly complete with good articles. The subject is treated in so many different ways that it is almost impossible to add anything that is new, either by way of new material or in the treatment of this material. The time allotted does not permit a discussion covering the entire subject. It is the purpose of this brief discussion to review only a few considerations in the line of differential diagnosis; things that should be thought of in the many atypical, acute surgical

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conditions, as well as those non-surgical situations which may at times very closely simulate the acute surgical picture; and also to consider how improvement in results might be brought about in preoperative and postoperative care of those cases which come to operation. Since the purpose is to deal with confusing and unusual conditions, the cases quoted will be some of those which have been extremely puzzling to the author and others associated with him. Some of these cases have terminated happily, and others not entirely satisfactorily.

It is assumed that we all are familiar with the usual list of conditions designated as acute surgical situations in the abdomen, as well as the typical pictures presented by them and the accepted surgical procedure ordinarily followed. For a quick review they will be briefly listed and only a few comments made before considering the atypical situations. In this group acute appendicitis is by far the most frequent in occurrence, and offers no unusual problems in the typical cases. The fact is well recognized that many atypical and complex problems may be encountered. Somewhere in the literature the remark is recorded that too many doctors wait for muscular rigidity to become evident before they realize that surgery is indicated. Acute cholecystitis, especially with stones, and many without stones, frequently belongs in this group. The question of whether to do cholecystectomy or not to do it requires careful judgment. The possibility of necrosis and perforation increases the urgency. Intestinal obstruction, including intussusception, always presents a reality of the gravity of the situation incident to delay. If done early, it is usually a simple procedure; if later, the procedure is complicated.

Ruptured ectopic pregnancy, in most instances, has typical history and findings, and early laparotomy is usually the treatment of choice. Diverticulitis is often listed, but actually it is not treated surgically except in cases of perforation, obstruction or persistent hemorrhage. Ruptured peptic ulcers, in most instances, have a spectacular onset and definite findings which are well recognized by everyone. The treatment is important because after a delay of six hours in closure, the mortality rate mounts rapidly. Acute pancreatitis is not frequently encountered. It is difficult to differentiate from perforated peptic ulcer, violent forms of cholecystitis, and acute intestinal obstruction. The history is usually pain, vomiting and collapse. The main reason for differentiating it from the aforementioned conditions is that surgery is not necessarily the treatment of choice,

according to some of our foremost authorities. Considerable evidence has accumulated to indicate that almost as many patients recover without surgical intervention as with it. There is no agreement as to which surgical procedure is most useful; some drain the gallbladder, some the common duct, others drain the capsule, and still others do no surgery at all. There are other less common conditions to be considered, but time does not permit a complete discussion of so large a field.

Under the classification of atypical situations is the increasing number of coronary heart attacks and the fact that a considerable number have abdominal symptoms which simulate those of acute surgical conditions. Coronary thrombosis with fever, nausea, vomiting, severe abdominal pain and leukocytosis, can very closely simulate acute cholecystitis, ruptured ulcer or other upper abdominal lesions, when the typical symptoms are vague or absent. The embarrassment incident to operating on a patient with a coronary heart attack is sufficient to serve for some time as a reminder to be always on the lookout for it. Ochsner feels most physicians recognize the fact that coronary disease can produce abdominal symptoms, but few realize that an acute abdominal lesion can produce symptoms of coronary disease. It is evident that a mistake either way is serious, but it is more serious to consider a ruptured peptic ulcer as a coronary attack and fail to give the patient the benefit of an early operation. Coronary heart disease may occur with, or as a result of, a true surgical condition in the abdomen. When this situation is present, it is extremely difficult, and it may be impossible by foresight, to make a correct diagnosis or to take the proper action. The author recently came in contact with a case brought in as one of cholecystitis requiring an early operation because perforation was expected. The pain was entirely abdominal and through to the back. There was rigidity of the upper abdominal muscles, nausea, vomiting, leukocytosis and fever. The pain had varied in intensity and had been present for about twelve hours. The typical chest or arm pains were absent. The blood pressure was low, and there had been some pain in the left elbow at the onset. The electrocardiogram was diagnostic. The patient died in twenty-four hours of coronary thrombosis. Soon afterward another supposed acute surgical abdominal condition presented itself with equal urgency and lack of definite differential findings. The electrocardiogram failed in this case to be helpful. Others on the case felt there was some possibility

of coronary disease, and delay was exercised. The patient recovered from this attack, but died of a typical coronary thrombosis attack some weeks later. Both of these patients barely missed an unnecessary operation at my hands.

Another problem in differential diagnosis which might lead one into pitfalls is the abdominal symptom of pain, more or less rigidity of the muscles of the upper abdomen, nausea, vomiting, gaseous distention and leukocytosis which can, and occasionally do, accompany upper urinary tract disease. This may be due to stones, infection or hydronephrosis. Very recently the author encountered one of these cases. The referring doctor was confident the case was one of ruptured peptic ulcer. By the time the patient arrived at the hospital the condition resembled acute cholecystitis. The abdominal pain was more marked in the right upper abdomen than in the left, yet the cause was a left hydronephrosis with the ureter kinked at the ureteropelvic junction and containing 45 cubic centimeters of urine. Catheterization and dilatation of the ureter relieved the symptoms.

The pulmonary diseases which may simulate the surgical emergencies in the abdomen are referred to because they are more frequently encountered than we realize until we begin to study them from a statistical viewpoint and note their actual frequency. A beginning central pneumonia, which certainly can be difficult accurately to diagnose, is most disturbing. It should be borne in mind, when an x-ray has been found to be positive in those cases where one is wavering between pneumonia and appendicitis, that not infrequently both conditions may be present. More often the x-ray diagnosis of central pneumonia saves an unnecessary appendectomy, but may occasionally be the cause of neglect in a coincidental acute appendiceal condition, unless this fact is borne in mind and properly followed up with sufficient vigil. Other conditions in this group not so frequently observed which may be confusing are diaphragmatic pleurisy and spontaneous pneumothorax. The pneumonia situation of confusion is of course more frequently encountered in children, while the latter conditions occur more often in adults.

Acute salpingitis has many times been the cause of unnecessary laparotomies as well as the needless sacrificing of fallopian tubes which might later have functioned if a more perfect diagnosis had been made. Many times it is impossible to tell whether one is dealing with an acute appendiceal situation or an acute tubal disease. Today it is more important than ever before to attempt to

save fallopian tubes because of the success which might result from the more recent chemotherapy and physiotherapy. Acute salpingitis frequently resembles acute appendicitis, but may simulate acute cholecystitis due to the pain caused by peritonitis present between the liver and diaphragm. Curtis refers to the adhesions which persist after such inflammation in this region as the "telltale violin string adhesions." This pain in the liver region has helped me in the differential diagnosis in more than one case of salpingitis. However, it is not always present.

Not long ago I almost delayed too long in a case of ruptured ectopic pregnancy, because the outstanding symptoms and findings were pain and tenderness which are characteristically those of acute cholecystitis. Delay due to symptomatic treatment for gallbladder disease permitted more complications to develop which led to a correct diagnosis. Examination of the cul-de-sac was diagnostic.\* In this case the history was not of sufficient help, which is unusual. The reason for the gallbladder-like pain was the irritation of the peritoneum due to the visitation of blood coming up under the diaphragm by way of the gutter. This was evident on exploration at operation. There was no evidence of gallbladder disease, nor was there previous history to this effect, and the patient has enjoyed perfect health since then.

Acute retrocecal appendicitis occasionally offers an opportunity for the most ingenious inquirers to speculate upon. The disease may simulate gallbladder or ureteral affections, kidney disease, lumbago or what have you, instead of the many typical manifestations of acute appendicitis. It is true that too many retrocecal appendices come to operation only when suppuration has made considerable progress. Perfection in diagnosis in these cases cannot be expected, but more thought and study of them will improve results.

This review has not insinuated that the diagnoses of these syndromes have been badly handled in the past. Nevertheless there is a need for improvement in results in the care of these situations as a whole, including both diagnosis and treatment. Statistics show that we have failed in the last decade to make much headway in results. This is sadly true in the case of appendicitis which represents by far the majority of acute surgical abdominal conditions, but is also true for the most part in acute abdominal surgery in general. With this in mind it appears that the responsibility lies with the younger surgeons to cope so efficiently with this difficult phase of surgery that a more effective type of diagnosis and treatment will show an improve-



ment in results in the future. It should be keenly realized in shouldering the responsibility of making the final decision and taking the final action, that more background, experience and wise judgment are required than in any other field of medicine.

It is suggested in the previous paragraphs of this discussion that there are many conditions which are really acute surgical affairs, and that there are many conditions simulating them which are classified as medical, urologic, gynecologic, and otherwise, and require a wide range of knowledge. All this raises the question as to whether or not those who decide the crucial emergencies are to be more specialized or more generalized in their training. It should be borne in mind that the predecessors who accomplished the spectacular development in diagnosis and treatment of acute abdominal conditions were much more generalized in training and experience than those who are now beginning to take over. The proposal is, that if better results are to be obtained, the surgeon who deals with these emergencies should specialize in more general study; he should be more competent in understanding heart and chest conditions, yes, even electrocardiography and urology as well as gynecology. He should ever be expanding his field of study as well as his interest of observation, over the fences into these other fields, rather than limiting his field of study, in order that a more useful judgment may be developed. It is further suggested that this group should perhaps expect to do more to develop the application and perfection of the many facts and methods which are already at their disposal than to continue as we have in the recent past and let results remain stationary while we wait for newer and more spectacular developments. To illustrate, I shall quote only three examples. It has been well demonstrated that in peritonitis cases, especially postoperatively, the use of heroic doses of morphine, the Levine tube with suction, complete abstinence from enemas, laxatives or other peristaltic stimulants are indicated for best results. Yet the author has had occasion to believe that the old methods are still too frequently being tried, with bad results.

The possibilities for development and proper application in the new field of chemotherapy, especially as a postoperative adjunct, challenge each of us. It is certain that we are only beginning to know where, when, and how best to make use of sulfanilamide and its derivatives, as well as to learn to respect and avoid the unfavorable effects of its use. This also is true of the other related agencies. In those cases where vomiting

or loss of material through fistulous tracts is prolonged, vitamin needs as well as minerals, fluids and variations in blood protein both as to the total protein and the proportionate ratio between albumin and globulin, must be properly understood and handled if we are to improve results. It is hoped then, that if we make the best use of the present knowledge in as broad a scope as possible, we will improve our results, and in doing this also develop some new and beneficial means to relieve suffering and prolong life.

In summary then, the theme of this paper has been the improvement of results in handling supposed acute surgical conditions in the abdomen, both as to accurate diagnosis of confusing syndromes and the full use of the known facts of preoperative and postoperative care in those patients upon whom we operate.

#### Discussion

Dr. Prince E. Sawyer, Sioux City: The subject of acute surgical conditions of the abdomen, with their treatment, is to my mind, the most interesting subject with which the general surgeon has to deal. There are so many acute conditions which occur in the abdominal cavity, and also so many conditions occurring in other places which simulate abdominal disturbance, that in order to give his patients the best service possible, one must be well versed not only in surgical conditions of the abdominal cavity, but should also be a specialist, as you might say, in the general practice of medicine.

I was very much interested in many phases of Dr. Johnson's paper. I was especially interested in his remark that "all this raises the question as to whether or not those who decide the crucial emergencies are to be more specialized or more generalized in their training." That sentence raises a great question in regard to the training of the young specialist whether his specialty be in surgery, eye, ear, nose and throat, or whatever it may be. In other words, we should decide whether the young surgeon should be satisfied with the general training which he receives in school and devote himself to his specialty as soon as he gets out of training, or whether it would be better for him to devote a few years to all lines of the practice of medicine, thereby becoming conversant with every phase of sickness, with its symptomatology, with its treatment, and so developing a self-reliance and a self-confidence that can come only to those who have been well trained following their graduation by direct contact with all phases of the practice of medicine. This is a question which the essayist brought up, and while he did not in so many words decide it, nevertheless, I believe his judgment was more in favor of the specialist becoming more specialized in general medicine, and that by so doing, his patients would reap the reward of that kind of study.

This subject is so extensive and covers so many

surgical conditions, that it is impossible to concentrate on more than one phase of it, and I am picking out one in which I am especially interested and in which I know you are too, because of the amount of literature which one sees in every magazine he has picked up for the last ten or fifteen years, and that is the subject of acute appendicitis. About twenty years ago, the mortality rate of appendicitis was about 10,000 and only a short time before that some people were so optimistic they said the last word had been spoken on the treatment of appendicitis and that it was not wise to take up time at a medical meeting to discuss a subject upon which nothing further could be said. About five years ago, it was discovered that the death rate of appendicitis had increased to about 20,000 which of course is an enormous increase and no one seems able to tell definitely why this increase has occurred. I am sorry but I will be unable to tell you any special reason for this sudden increase in mortality rates, but I do have two or three cases that have interested me very much and if I have time, I would like to tell you about them.

J. Shelton Horsley, in an article published about a year ago, entitled "Appendicitis: New Methods of Treatment," takes up the use of sulfanilamide or some of its preparations, and states that a primary or hematogenous peritonitis is frequently due to the streptococci and that in these cases, this drug sometimes works almost like magic. The first case I refer to occurred about a year ago. The patient was very ill with appendicitis when he was brought into the hospital and a diagnosis of ruptured appendix was made. The patient was operated upon and a gangrenous appendix was found with free pus in the abdominal cavity, but there was no odor to the pus, and the appendix had not ruptured. The appendix was removed and the patient was given the usual treatment for cases of this kind. Blood for a culture was taken on the second day. On the fourth day a pure strain of streptococci in the blood stream was found and the patient died about the same time.

The next patient was brought in two or three months later, with the same symptoms. Upon opening the abdomen, we found the same conditions; the terminal ileum was inflamed, as was also the cecum, and the bowel was moderately distended. Microscopic findings in both cases were acute purulent appendicitis. We had discussed this matter and had decided that in all of these cases where we had a spreading peritonitis with a gangrenous appendix but no odor to the pus indicating the absence of a colon bacillus infection, we would not only drain the cavity and remove the appendix, but would do an ileostomy. We did this, and blood was also taken at the time of the operation for a culture. As soon as the patient was returned to his room, he was given ten cubic centimeters of five per cent neoprontosil solution, intramuscularly. This treatment was continued every four hours for forty-eight hours. At the end of forty-eight hours, the blood culture showed a pure strain of streptococci. In spite of this, the patient made a perfect recovery,

with no untoward symptoms. About three months after this we had another case with the same symptoms, the same treatment and the same results. Of course I know that this is not new to any of you, but it has been presented to me in such a forceful way that I thought I would present it to you for what it was worth.

I certainly want to thank the doctor, for what to my mind was a very good paper containing many good suggestions, presented in a very excellent manner.

Dr. W. R. Brock, Sheldon: I do not believe that our medical knowledge will ever become so profound or the art of diagnosis will ever be so perfect and refined but what there will still remain many perplexities relative to acute conditions in the abdomen. We used to have an old surgeon in northwestern Iowa who would say to his patients when he was confused in making an abdominal diagnosis, "I don't know what is the matter with you, but I can cut you open and find out." This bold confession of ignorance with an eager desire to operate has been replaced by advancement in the field of abdominal diagnosis and a dignified and cautious approach with surgery. A few years ago, I witnessed a very interesting clinic. Doctor Charles was ready to operate when Doctor Will stepped in the operating room and asked Charles, "What are you going to do?" Charles replied, "I am going to remove this lady's appendix." "Who is she?" asked Will. Charles replied, "So and so from such and such a place." Then Will said, "I was over that case very carefully yesterday and I didn't consider that she has any trouble with her appendix, but that her trouble is in the gallbladder." "All right," said Charles, "then I'll make my incision higher and over the gallbladder." He found the gallbladder and adjacent tissues normal. He pulled up the ascending colon and removed an appendix that did not appear to be responsible for all the patient's symptoms. Then he reached deeply into the pelvic cavity and said, "Ah, here is something, but I can't reach it from this incision." He closed the abdomen, made a low median incision and removed a pregnancy of the right fallopian tube the size of a hen's egg. There is no disparagement meant for the work of these two greatest world surgeons, but rather a compliment, for they found the location and the nature of the pathology and removed it, making a success of surgery, which after all, is the vital issue.

I am glad to note that Dr. Johnson has admitted in his conservative address that the apparently acute abdominal condition does not always call for immediate surgery. Dr. Arnold Jackson of the Jackson Clinic of Madison, Wisconsin, has delayed immediate surgery in some cases of acute cholecystitis, using the suction tube, withholding nourishment from the stomach and supplying nourishment in the form of five or ten per cent glucose intravenously. He reports fine results in carefully selected cases. To select the proper cases for this procedure requires good judgment and an accurate diagnosis. I am well aware that the time was too short for Dr. Johnson



to mention all of the causes of the acute conditions in the abdomen, but in the discussion of this subject, I feel that we should keep in mind the possibility of diaphragmatic hernia, with or without strangulation, abdominal apoplexies, ruptured aneurysm of the abdominal vessels, thrombosis of the mesenteric arteries, and torsion of the ovarian pedicle, with or without hematoma. Dean Lewis mentions torsion of the pedicle with a great deal of emphasis.

The old darky minister was preaching a very lively sermon to his colored flock upon the incident of the fall of man. He told how the serpent inveigled Eve into eating of the forbidden fruit in the Garden of Eden, and because of this crime, the Lord at once pronounced a sentence upon the serpent which was to the effect that the serpent would have to crawl on his stomach for the rest of his life. A fourteen-year-old girl in the audience broke in on the minister, and asked how the serpent navigated before the Lord pronounced the sentence. The minister replied, "Dat am a question dat can be answered only in Latin, 'Mene, Mene, Tekel, Upharsin.' Dat am the answer, but honey, you is too young to understand it."

The medical profession is too young to understand all the languages that are spoken and unspoken by acute surgical conditions in the abdomen.

### PAINLESS APPENDECTOMY

RALPH L. GORRELL, M.D., Clarion

Pain following an abdominal operation may be greatly decreased by the injection of a local anesthetic solution into the region of the incision or lateral to it. It may also be lessened by the use of a transverse incision and by the avoidance of any procedure during the operation which would cause pain or discomfort to the unanesthetized patient, such as picking up the skin with towel clips, clamping rough towels on the edge of the incision, blunt and rough dissection, spreading of tissues, and incising sensitive structures like the skin, fascia and peritoneum without first locally anesthetizing them. Crile's<sup>1</sup> work on anoci-association was fundamentally much more important than is realized at the present time. Leriche has shown that pain is in itself a disease.

*Technic:* If the operation is carried out under spinal or nerve block anesthesia (which prevents painful impulses from reaching the central nervous system, and in itself is a valuable means of preventing postoperative pain), the incision is made transversely at the level of the anterior superior spine or lower, if the point of maximum tenderness is inferior to that point. This incision may be four inches in length and yet the patient will have little pain if care is taken to cut cleanly, and blunt freeing of the rectus fascia is not done.

The line of incision is infiltrated with procaine solution or eucupin-procaine solution, one-half of one per cent, if the operation is performed under general anesthesia. The rectus fascia and peritoneum are also infiltrated, so that no sensitive tissue is incised until it is anesthetized. A further refinement is to infiltrate the mesoappendix with the solution before clamping or ligating the appendiceal artery<sup>2</sup>. The time for the operation is reduced if adrenalin is added to the procaine solution, since oozing is obviated and with it the clamping of many tiny veins.

The edges of the incision are protected with soft latex rubber sheeting or dam and the bowel is packed back with the same material, so that gauze packs never touch the delicate serous covering of the intestine. Preferably, the cecum is isolated by tilting the patient to the left so that the small bowel falls away from the ascending colon and the cecum is seen without the necessity of pressing on the intestine or inserting packs of any type.

No drains are ever used unless the peritoneal cavity is full of free pus, although after the removal of any acutely infected appendix a strip of rubber or cigarette drain should be left down to the peritoneum, to prevent the formation of a wound abscess. A catheter (French size 18) with several additional holes cut out may be slipped through the opening left in the cecum by the removal of the appendix and secured by two purse string sutures, if the appendix is severely inflamed or if peritonitis is present. Its use often permits the patient to pass gas, thus relieving or preventing "gas pains" and may prevent the later use of ileostomy or duodenal tube for relief of distention.

*Postoperative Care:* One-sixth grain of morphine is used each night for two nights. Mild discomfort is relieved by nembutal ( $\frac{3}{4}$  grain), acetylsalicylic acid (5 grains) or Dover's compound-aspirin tablet every four or five hours. The adhesive tape is cut along the gauze at the end of twenty-four or thirty-six hours, to permit the slight distention that follows any abdominal operation. Overlooking of this minor point causes the patient to suffer unnecessary discomfort.

*Immediate postoperative feeding:* It is a strange commentary on the logical processes of surgeons' minds that they ordered no food to be given to patients either before or after operations, for many years, and at the same time noted that those patients subjected to emergency operations often had less discomfort. We treat the patient as a normal individual both before and

after operation. He is encouraged to eat a full meal the evening before operation and is given sufficient sedation that digestion is not hampered by apprehension. If the operation is performed under local anesthesia, food is taken at noon; if under general anesthesia a few bites of solid food are taken on the evening of the operative day. The patients are required to take a little solid food at each meal time thereafter, despite anorexia, nausea or slight distention. Liquids are given in very small amounts during the first forty-eight hours, but foods with high water content (ripe banana and carefully peeled apple) are given every two hours to prevent thirst. Saline solution or five per cent dextrose solution is given by hypodermoclysis if nausea persists or if vomiting appears (usually in one case out of five). If definite distention appears, a duodenal tube is inserted but this is necessary usually only if the appendix is ruptured, and the insertion of a cecostomy tube at the time of operation often relieves gas.

*Results:* These patients usually have little pain in the incision; they move about in bed freely and notice few or no gas pains late in the second or early on the third day. The few which may appear are readily relieved by one tap water enema on the morning of the third day. They are a joy to the nurses because they sleep all night, do not need to be catheterized, probably because of lessened pain in the incision, and do not make demands on their time. The average patient with acute, non-ruptured appendicitis, is up on the edge of the bed on the third day and in a chair on the fourth day. Even the most complaining patient is ready to go home on the seventh day. Early walking seems to help cut down pain in the incision.

*Eucupin:* Eucupin is a long-acting local anesthetic which is bactericidal. Its chemical name is isoamylhydrocupreine, indicating that it is a synthetic alkaloid closely related to quinine. The manufacturers\* have kindly supplied us with quantities sufficient to carry out clinical research. Because of a slight burning sensation on injection, it is usually made up with one per cent procaine solution. It is also furnished in oil solution for prolonged anesthesia after rectal operations, and in iodized oil for the injection treatment of low back pain.

After completion of the appendectomy and suture of the peritoneum, from 30 to 60 cubic centimeters of eucupin solution with procaine one per cent are injected into the peritoneum, rectus muscle and skin. The addition of four drops of

epinephrine prolongs the period of anesthetization. Occasionally, I have used eucupin in oil for a more prolonged effect but have not had the courage to inject amounts large enough to cause analgesia for several days, inasmuch as these are all private patients. It would be very valuable if a charity surgical service could inject oil soluble eucupin in a large series of cases, to observe the possible incidence of sloughs and delayed healing, as well as the lessened period of hospitalization.

de Takats<sup>3</sup> employed eucupin and a combination of one of the more rapidly acting anesthetics and epinephrine in 100 operations, which included herniotomy, thyroidectomy and minor surgical procedures about the head and neck, and reported a postoperative analgesia lasting about twenty-four hours. The solution did not cause tissue reaction nor any disturbance in wound healing (microscopic section and clinical observation). He feels that the powerful antiseptic property of eucupin is an advantage in ensuring sterility of the injected fluid as well as that of the operative field. This article was found on exploring the literature. Our incisions have healed normally. Davis technique<sup>4</sup> of performing a transverse incision was used. Except for the first case noted below, no patient had fever after twenty-four to forty-eight hours and then usually of a mild nature, 99 to 99.8 degrees.

#### CASE REPORTS

Case 1. Miss A. H., eighteen years of age, had suffered recurrent attacks of mildly obstructive appendicitis. Appendectomy was undertaken fifteen hours after the onset of pain, which was not relieved by rest and cold applications. Infiltration of the incision was carried out with eucupin-procaine solution and ether was given only after the peritoneum was opened. A pelvic appendix was removed. Postoperatively she complained of very little pain; she walked to the toilet on the third evening. Restlessness, tachycardia (100-110) and mild fever (99 to 100.4 degrees) persisted for eight days postoperatively and the wound was inspected several times for possible wound infection. The leukocyte count remained normal. At no time, was the thyroid gland palpable, but she had noted that she "trembled" when excited or nervous and her skin was warm. The tachycardia did not change on prolonged rest, but gradually disappeared after the operation.

Case 2. The second patient was Mr. W. H., thirty-four years of age, with a perforated appendix following dysentery. The usual transverse incision was made with gentle removal of the appendix and insertion of a cecostomy tube. No drains were used since pus had not spread beyond

\*Rare Chemicals, Inc., Nepera Park, New York.



the local collection, and drainage could take place along the cecal tube. He ate soft foods at every meal and was uncomfortable only on the second day until gas began to pass freely through the cecostomy tube. He was up in a week, the tube gradually slipping out on the fifth and sixth days, and the incision healed well.

Case 3. Mrs. E. G., thirty-three years of age, was seen because of acute obstructive appendicitis of eight hours' duration. Local infiltration anesthesia was used (this was requested by the patient who wished to watch the operation) until ether was necessary for the freeing of a markedly adherent retrocecal appendix. Postoperatively her course was uneventful. She received two hypodermic injections of morphine sulphate, 1/6 grain. She ate a few bites of toast on the same evening and did not miss a meal thereafter. On the third day, she stood up by the bed and on the fourth day she walked downstairs. At the end of a week, she was at home doing her own cooking. One enema was necessary on the third postoperative morning.

Case 4. Mr. M. S., eighteen years of age, was operated upon for recurrent attacks of right lower quadrant and right lumbar pains over a period of three weeks. Because of the presence of albumin (two plus) and a few pus cells in the urine, operation was deferred until an intravenous pyelogram was made, which showed nothing abnormal. The urinary findings disappeared promptly after a course of neoprontosil. At operation, the appendix was found to be fixed over the ureter in the right lumbar gutter. A few bites of food were taken three times each day. On the second afternoon, a feeling of "fullness" was relieved by cutting the adhesive tape straps (this is a common cause of discomfort) and then retaping after the abdominal wall had been allowed to bulge a little. A few crampy pains were relieved by two injections of morphine sulphate 1/6 grain and prostigmine.

Case 5. Mrs. E. F., Jr., underwent a tubal resection and implantation for sterility, a suspension of the uterus and the removal of a markedly adherent appendix. Despite the prolonged operative time, one and one-half hours, and the long midline incision, she had very little postoperative pain.

#### SUMMARY

Postoperative pain may be largely prevented if a few simple steps are taken.

1. Injection of eucupin-procaine solution into the lateral edge of the incision when suturing is done.

2. Infiltration of skin, rectus muscle and fascia

and peritoneum with procaine solution before incising them.

3. No procedure is carried out which would be painful to the unanesthetized patient: clamping skin with towel clips, use of rough towels on edge of incision, rough or blunt dissection, or forcible separation of muscles in line of incision, letting the patient's back remain unsupported by a small pillow.

4. Encouraging immediate postoperative feeding.

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### THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

#### GIANT CELL XANTHOMA OF THE WRIST

D. C. CONZETT, M.D. and E. R. YOUNG, M.D.,  
Dubuque

The case to be described is an example of a type of tumor usually occurring about the tendon sheaths of the hand or foot but also occasionally encountered about the knee or ankle joints. That these are not uncommon is indicated by the fact that fifteen similar tumors have been diagnosed in our laboratory. While there is still some doubt as to whether these lesions are neoplastic or inflammatory, they are recognized as a definite clinical entity of benign nature and therefore only require complete excision rather than amputation of the part involved.

#### CASE REPORT

The patient, a white man sixty-three years of age, was admitted to the Finley Hospital March 22, 1940, with a complaint of a "slowly growing mass on the dorsal surface of the right wrist".

*Family History:* There was no history of diabetes, tuberculosis or cancer in the family.

*Past History:* Five years ago the patient injured his right wrist and shortly afterward noted a small mass on the dorsal surface of the wrist. The mass was painless and remained stationary in size until about two years ago when it began to increase slowly in size. The growth had never interfered with the movements of the wrist.

*Physical Examination:* The general examination was essentially negative. Locally there

was a lobulated, painless mass the size of a walnut. It seemed fixed and was moderately firm in consistency.

*Preoperative Diagnosis:* Ganglion of the wrist.

*Operative Notes:* A linear incision was made over the tumor mass and the skin edges were easily retracted from the underlying mass. The latter consisted of a lobulated mass, the lobules varying in size from that of a pea to that of a lima bean. This mass surrounded the extensor tendons to the thumb and index finger. The growth was yellow to brown in color and seemed to originate in the tendon sheaths which it surrounded, but did not invade. The mass was removed and the wound was closed without drainage.

*Pathologic Report:* Grossly the specimen was a lobulated mass 4.5 by 3 by 2 centimeters. It was pink to gray in some areas, but the bulk of the tissue was yellowish brown. It had the consistency of granulation tissue and was encapsulated.

*Microscopically:* The sections showed a fairly dense but poorly defined connective tissue capsule and an irregularly staining connective tissue stroma. Scattered through the latter were numerous round and endothelial as well as fairly numerous foreign body giant cells. In some areas there were groups of clear cells with a foamy appearing cytoplasm and small, shrunken appearing nuclei. The giant cells contained six, ten or even twenty nuclei. Brown pigment, apparently hemosiderin, appearing both extracellularly and in the endothelial and foam cells, was noted in all sections. The foam cells also contained fat as demonstrated by staining with scarlet red. No cartilage or bone was noted in any of the sections.

*Anatomic Diagnosis:* Giant cell xanthoma of tendon sheath.

*Subsequent Course:* The wound healed by first intention and there has been no evidence of recurrence up to the present time (nine months after the operation).

#### GENERAL DISCUSSION

These tumors have been known under various names for nearly three-quarters of a century. In an excellent and complete review of the literature Galloway, Broders and Ghormley<sup>1</sup> found 275 cases of giant cell xanthomas of tendon sheaths and 43 of the synovial membranes. They also reported that 70 patients with 88 tumors had been treated at the Mayo Clinic between 1919 and 1939. Sixty-five patients had 82 tumors of the tendon sheaths and five had six tumors of the synovial membranes. In the past,

the tumors have been termed fusocellular, globocellular, fibrocellular or giant cell sarcomas, fibromyxosarcomas or even melanotic sarcomas, endotheliomas, synoviomias, myelomas, granulation tissue tumor, or giant cell tumor. It has only been within comparatively recent times that the tumors have been generally recognized as benign and at the present time they are usually designated as giant cell tumor, xanthomatous giant cell tumor of tendon sheaths or synovial membranes. That the tumors are benign is evidenced by their lack of invasiveness and failure to form metastases although they may recur locally if not completely removed.

The exact nature of these tumors is not known. Some believe they are of an inflammatory origin; others, that they are true tumors or new growths. Geschicter and Copeland<sup>2</sup> believe that they originate in sesamoid bones but Galloway and his associates could find no evidence that this hypothesis was true in their series of cases. They found no histologic evidence for such an origin and in roentgenograms could find sesamoid bones at the site of the lesions in only a very few cases. They also point out that the tumors arise on the extensor surfaces and at other sites where sesamoid bones are conspicuous by their absence. Most authors agree that they are benign but Hartman<sup>3</sup> believes there is always a potentiality of malignancy. Galloway also states Krogus was of the opinion that lesions on the fingers were benign but those of the palm of the hand, foot or forearm sooner or later revealed a more malignant character. In the Mayo Clinic series Galloway and his associates concluded that the lesions were not potentially malignant. It is generally recognized that the swellings have some of the characteristics of an inflammatory process. They also have some characteristics of a true neoplastic process but they are not comparable to the clearly defined neoplasia. Nevertheless the tumor is an entity which possibly results from repeated trauma or low grade infection and a coexisting disturbance in cholesterol metabolism. For a complete discussion of the cholesterol metabolism in this and other xanthomatous diseases, the reader is referred to the paper of Thannhauser and Magendanz<sup>4</sup>.

*Diagnosis:* While the tumors may occur at any age and with about equal frequency in either sex, the great majority occur in the third, fourth and fifth decades. The diagnosis should be suspected where patients in these age groups present themselves with a painless swelling or tumor, located on a tendon sheath, usually the flexor, which has gradually increased in size. Frequently



there is a definite history of trauma or the individual's occupation is one in which minor trauma is likely. In the case of joints, as a general rule, there is a history of locking of the joint and the diagnosis may be in doubt until operation. This is especially true because the roentgenograms are usually negative. However, the diagnosis may be indicated by elevation of the cholesterol of the blood or of the joint fluid obtained by aspiration. The tumors must be differentiated from chondroma, lipoma, carcinoma or some inflammatory condition of the skin, osteoma or ganglion. Usually this is done by their respective consistencies, roentgenograms and finally by biopsy.

*Treatment:* Since the tumors are benign, conservative surgical removal is the recognized treatment. Usually the tumors are easily removed but if not completely removed, recurrence is likely. In such an event a second excision is required but a limb should never be removed for what may be considered a sarcoma. Because the tumors are believed to be associated with high cholesterol concentration in the blood, a diet low in cholesterol should be prescribed. The value of x-ray therapy in these tumors is doubtful but may prevent recurrence in those cases in which there is incomplete surgical removal.

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### MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

#### Meeting of the Council

Thursday, November 21, 1940

The Council of the Iowa State Medical Society met in the Cabin at the Hotel Fort Des Moines on Thursday, November 21, 1940, with the following persons present: Councilors C. H. Cretzmeyer of Algona, F. P. Winkler of Sibley (chairman), J. E. Reeder of Sioux City, E. F. Beeh of Fort Dodge, C. W. Ellyson of Waterloo, H. A. Householder of Winthrop, C. A. Boice of Washington, R. C. Gutch of Chariton, J. G. Macrae of Creston, and M. C. Hennessy of Council Bluffs; Commissioner of Health, Dr. Walter L. Bierring; and chairman of the Tuberculosis Committee, Dr. J. C. Painter of Dubuque.

The meeting was called to order by the chairman at 1:15 p. m. and the following business was transacted: minutes of previous meeting were approved; report of the Tuberculosis Committee was given, discussed and adopted; purpose of the Committee on

Industrial Health was discussed and it was recommended that one member of the committee be sent to Chicago to attend the meeting of the Council on Industrial Health in January; report of the Cancer Committee was given and tumor clinics were discussed. Meeting adjourned at 2:30 p. m.

#### Meeting of the Executive Council

Thursday, November 21, 1940

The Executive Council of the Iowa State Medical Society met in the Cabin at the Hotel Fort Des Moines Thursday morning, November 21, 1940, with the following physicians present: E. B. Bush of Ames, O. J. Fay, Robert L. Parker and Harold J. McCoy of Des Moines, L. R. Woodward of Mason City, C. H. Cretzmeyer of Algona, F. P. Winkler of Sibley, J. E. Reeder of Sioux City, E. F. Beeh of Fort Dodge, C. W. Ellyson of Waterloo, H. A. Householder of Winthrop, C. A. Boice of Washington, R. C. Gutch of Chariton, J. G. Macrae of Creston, M. C. Hennessy of Council Bluffs, T. F. Suchomel of Cedar Rapids, and Robert S. Shane of Pilot Mound.

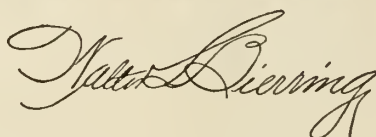
The meeting was called to order at 10:45 a. m. by President-elect Bush. Business transacted was as follows: it was voted that the State Society should award a certificate of merit to the best scientific exhibit at the annual meeting, and that the president should be authorized to appoint a committee to judge the merits of the various exhibits; it was voted to restrict the scientific exhibits to Iowa physicians; Dr. T. F. Suchomel, chairman of the Medical Preparedness Committee, reported on the return of questionnaires, the need to safeguard the practice of physicians called into service, the necessity for appointing county committees on medical preparedness, and the history behind the naming of examining physicians and medical advisory boards; legal opinion regarding a group insurance plan was read and approval of the plan withheld; Dr. Hennessy was instructed to see the Industrial Commissioner in regard to certain policies of the Commission. Meeting adjourned at noon.

#### Meeting of the Medical Preparedness Committee

Thursday, December 19, 1940

The Medical Preparedness Committee of the Iowa State Medical Society met in the central office Thursday morning, December 19, 1940, at eight o'clock. Those present were F. P. McNamara of Dubuque, E. B. Bush of Ames, T. F. Suchomel of Cedar Rapids, R. S. Shane of Pilot Mound and Robert L. Parker of Des Moines. The committee passed upon a recommendation from Page county that no more physicians be called into service, and decided that each county committee on medical preparedness should prepare a list of physicians who should be declared exempt from military service. Instructions for making such determinations were formulated, and the meeting adjourned at 11:00 a. m.

# STATE DEPARTMENT OF HEALTH



*The Iowa State Department of Health  
Wishes good cheer  
And to all in the Commonwealth,  
A Happy New Year.*

## Notes on Pneumococcus Carriers and the Pneumonias

### Friedlander's Bacillus Pneumonia

Friedlander, in 1882, was first to isolate from certain pneumonia patients a bacillus which was found to be very similar to the pneumococcus from the standpoint of biology and immunology.

Julianelle recently reviewed 106 cases of Friedlander pneumonia. About one per cent of all pneumonia cases are caused by the Friedlander bacillus. The mortality rate is very high, about 80 per cent. This form of pneumonia usually attacks persons in the fifth and sixth decades of life, but is not found in infants or children. Males suffer more frequently than females.

#### *Clinical Forms.*

Clinically, Friedlander's bacillus pneumonia occurs as atypical or bronchopneumonia, lobar and chronic pneumonia. The atypical form is very uncommon; the process extends rapidly, the general picture being that of the lobar variety. Lobar pneumonia begins suddenly, with fever usually not over 102 degrees. The sputum is tenacious and abundant; infection lasts about a week. The chronic form is characterized by marked tissue destruction and leads to abscess formation with cavitation, later followed by healing.

#### *Bacteriologic Diagnosis.*

As with pneumococcus pneumonia, the Friedlander form is caused by strains of Friedlander bacilli designated A, B, C and X (miscellaneous). The organism is isolated from sputum by cultural method and by mouse inoculation; the specific type is identified by the Neufeld technic. Type A cases are most frequent and most highly fatal.

#### *Therapy.*

Treatment until recently has been unsatisfactory. The sulfonamide drugs render the outlook somewhat more hopeful. On the other hand, among seven patients with Friedlander pneumonia (six with Type A and one with Type B) who were treated with sul-

fanilamide, sulfapyridine and sulfathiazole, all succumbed by the end of a week. Two other patients with Type A received serum but died in twenty-four hours. Bullowa recently treated six Type A cases with drug and serum. Three of these patients survived, leading to the conclusion that combined treatment may prove more effective than any other.

### Pneumococcus Carriers And Casualties

Studies carried out by certain investigators have added much to knowledge of the part played by pneumococci of various types in healthy as well as diseased persons. Smiley found that individuals in healthy families harbor pneumococci, particularly the higher types, as frequently as do people who are in direct contact with pneumonia patients in home or hospital.

#### *Search for Pneumococci in Hospital Staff and Personnel.*

Finland, Brown and Barnes in the September, 1940, number of the American Journal of Hygiene, report results of observations covering a period of one year on a group of 126 persons, including internes, nurses, attendants, technicians and technical clerks in a large general hospital.

#### *Bacteriologic Procedure and Mouse Inoculation.*

When a patient has pneumonia, special effort is made to obtain sputum coughed up from the lungs. In healthy persons, the usual method is to pass a sterile swab over both tonsillar fossae and the posterior pharyngeal wall, incubate the culture in special broth medium for four to six hours, inoculate some of the culture into a mouse and identify the type of pneumococcus in the peritoneal exudate by the Neufeld method.

Mouse inoculation, subsequent to culture in broth, was found by Finland to be the best method of detecting pneumococcus carriers. Pneumococci were more readily identified from the mouse peritoneal exudate than from the heart blood. "In some instances, mouse passage was necessary before the



type could be determined. \* \* \* With use of broth culture alone, the pneumococcus was isolated in less than half as many instances as when resort was made to mouse inoculation."

Carriers and Types of Pneumococci.

Of the 126 individuals under special study, 71 or 56 per cent showed presence of pneumococci on one or more occasions. During the study, throat cultures were taken at intervals of from one to three months. Four persons were found to be carriers of Type I pneumococcus; Type II was identified in only one instance; thirteen of the group carried Type III and eleven Type VI. Pneumococci, Types VIII, IX, XVI and XVIII were each found to be harbored at some time or other by four persons; Type X by three persons. Some of the other higher types of pneumococcus were found in one or two instances.

Duration of Carrier State.

When an individual was found to harbor a certain type of pneumococcus, "later cultures usually showed presence of the same type." One of the internes harbored Type VIII continuously over a twelve-month period. The pneumococcus carrier condition persisted in many of the subjects throughout the period of observation.

Pneumonia Casualties.

During the time that Finland and associates were conducting their study, some casualties occurred. Four internes developed pneumonia; all showed atypical or bronchopneumonia, not frank lobar pneumonia. One interne who had been found to harbor Type XIII pneumococcus, developed pneumonia and the same type of organism was found in the sputum. A second interne from whose throat pneumococcus Type III had been isolated, acquired pneumonia and the same organism (Type III) was demonstrated during illness.

Although the two remaining internes had shown the presence of Type XVIII prior to illness, the predominant organism after pneumonia developed, was

a streptococcus showing alpha hemolysis. Finland and his associates conclude: "The findings in the subjects who developed pneumonia indicate that pneumococci in patients with atypical pneumonia may not be etiologically related to the infection."

SIXTH PNEUMOCOCCUS STUDY COURSE

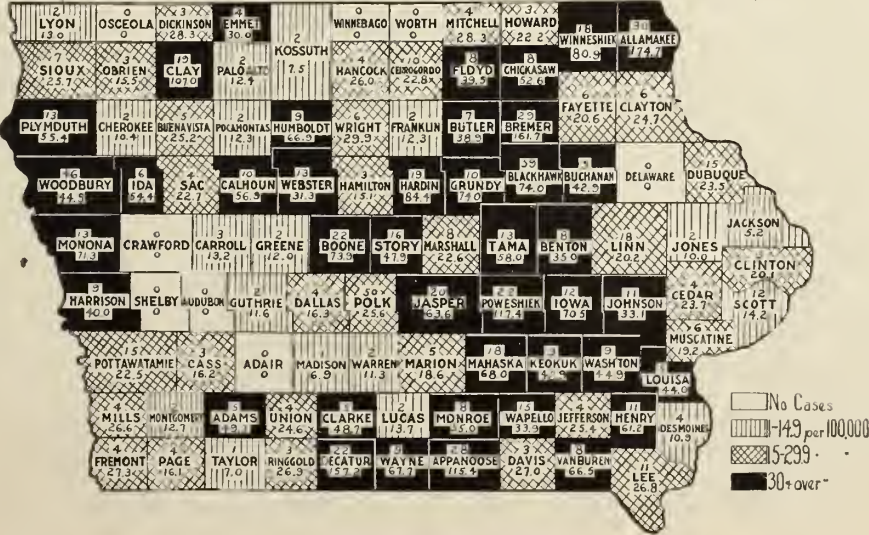
Announcement is made of another Pneumococcus Study Course, to be held at the Department's State Hygienic Laboratory, Medical Laboratories Building, Iowa City. The dates of the meeting are Tuesday to Thursday, February 4 to 6, 1941. Laboratory workers who desire to attend are requested to write to the State Department of Health, Des Moines, early in January.

NEW PNEUMONIA BOOKLET

A new booklet entitled "Pneumococcus Pneumonia, Diagnosis and Treatment," prepared and revised by the Department's Advisory Committee on Pneumonia Control, was printed in December. Copies of the booklet were mailed during the third week of December to all physicians, pharmacist-distributors and pneumonia typing stations in Iowa.

PREVALENCE OF DISEASE				Most Cases Reported From
Disease	Nov. '40	Oct. '40	Nov. '39	
Diphtheria.....	19	27	32	For State
Scarlet Fever.....	293	199	303	Polk, Linn, Lee, Scott
Typhoid Fever.....	3	10	2	Clayton, Johnson, Madison
Smallpox.....	2	2	34	Mahaska, Polk
Measles.....	126	142	73	Dubuque, Buchanan
Whooping Cough.....	108	78	48	Dubuque, Story
Brucellosis.....	12	30	19	For State
Chickenpox.....	362	147	299	Lee, Dubuque, Woodbury, Black Hawk, Polk
German Measles.....	6	2	5	For State
Influenza.....	6	8	1	For State
Malaria.....	1	3	0	Black Hawk
Mumps.....	115	102	154	Woodbury, Lee, Muscatine
Pneumonia.....	103	83	80	For State
Polio-myelitis.....	33	242	62	For State
Pulmonary Tuberculosis.....	5	192	36	For State
Tularemia.....	1	1	52	Humboldt
Gonorrhea.....	114	155	116	For State
Syphilis.....	216	222	189	For State

Polio-myelitis Case Reports + Rates per 100,000 for Jan. 1 thru Nov. 9, 1940.



# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## A NEW YEAR BEGINS

Once again that time of year has arrived when a spirit of gaiety, of good-will, of new resolutions, and of new hope, prevails—at least on this side of the water. That it might be so on the other side is uppermost in the hearts of all free Americans. "Peace on earth, good-will to man" is almost a hollow mockery this season, but is it too much to hope that the "mills of the Gods" may soon grind out the miseries and hates of the peoples of the earth, and that by another year, "Peace on earth" may have a real meaning?

Here in our own country, in our own state, in our warm homes and with our tables laden with plenty, we are troubled but little by the tragic experiences of those whom fate has destined to dwell in war-infested lands. Our "Happy New Years" ring out on every side with all the enthusiasm and abandonment of other years. We are indeed a fortunate people; yet in the midst of our holiday celebrations and our plans for the new year, there is an undercurrent of profound sympathy for those less fortunately situated. Perhaps never before have so many people appreciated so keenly the advantages which we in America possess. As we consider our resolutions, then, should not our number one resolution this year be a firm determination to do everything in our power to keep this country of ours a land where holiday greetings still have a note of genuineness in them.

The JOURNAL can extend to its readers no more heartfelt wish than that they may continue to know the blessings of peace and of freedom in a land where democracy shall continue to reign not only for the ensuing year, but for many years to come.

## THE USE OF POOLED HUMAN SERUM

In the last issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY it was announced by the State Department of Health that the Serum Center now has available pooled human serum for the treatment of shock. The Iowa State Department of Health is the only state department of health in the nation with such a serum center. It is appropriate for the profession of Iowa to give credit for the wisdom and foresight of the Director of the Department of Health who is responsible for the development of the serum center. Convalescent serum for the prophylaxis and treatment of measles and scarlet fever, convalescent serum for the treatment of poliomyelitis, and now pooled human serum for the treatment of shock are available.

It seems fitting that some of the indications for the use of pooled human serum be reviewed. The primary purpose in preparing the pooled serum is for the treatment of shock. The exact explanation of the shock syndrome is still not completely understood. It is known, however, that whether shock is primary or secondary, whether it is due to hemorrhage or trauma, there is a decrease in plasma volume and diminished peripheral blood flow. In the presence of abnormally permeable capillaries, there is stasis of blood and transudation of plasma in the tissue spaces. The diminished blood volume and peripheral blood flow result in a decrease in the supply of oxygen to the tissues and anoxia develops. In the treatment of shock it is imperative that the progressive loss of blood volume be stopped before irreparable tissue damage results. In the past the most common therapeutic measure has been the administration of glucose in normal salt solution or of Ringer's solution. It has been shown that the introduction of solutions of electrolytes does increase the blood volume, but the effect is only temporary, because they diffuse through abnormally permeable capillaries with resulting tissue edema. There is dilution of plasma which lowers the serum protein. The most valuable agent in the treatment of shock is the transfusion of whole blood. However, urgency in the treatment of shock is fundamental and the delay involved in procuring donors, typing, testing for compatibility and securing the blood precludes the use of blood at the time it is most needed. The intravenous administration of pooled serum, made available by the Department of Health, is as efficacious as blood in the treatment of shock, with or without hemorrhage, and it can be given without delay at a time when the immediate restoration of blood volume is a lifesaving measure.

In addition to the treatment of shock the admin-



istration of blood serum is indicated in numerous other conditions. In the therapy of burns, serum combats lessened blood volume and lowered serum protein. Serum is of value in conditions in which there is a loss of serum from the blood stream, as in nephritis with excessive and prolonged albuminuria; in conditions in which the supply of protein to the organism is deficient, as in inanition, prolonged vomiting or diarrhea; and in primary disturbances of protein metabolism, such as nephrosis. Certain authors report a lowering of the serum protein in the toxemias of pregnancy, particularly eclampsia. The prolonged administration of parenteral fluids to medical or postoperative patients results in hypoproteinemia and edema, and the administration of serum or blood is definitely indicated.

The intelligent use of pooled human serum in shock and numerous states in which there is a lowered serum protein is a valuable therapeutic aid. Serum is available at the Serum Center of the Iowa State Department of Health as the result of the foresight of the Director.

#### CHILDREN IN A DEMOCRACY

A short time ago the papers of this country carried as front page news a speech by Adolf Hitler in which he posed as the champion of the "have-nots" engaged in a bitter struggle against the "haves." America was cited as having twelve or thirteen million unemployed people, whereas Germany had none. America was also the land in which the bulk of the wealth was concentrated in the hands of a few. No such situation prevailed or was permitted to prevail in Germany. The impression the world was intended to gain from this speech of Hitler's was that a new German order was being established which was superior to the social and economic systems in democracies.

Obviously talk of this nature is pure propaganda, and should be answered by someone from a democracy, sufficiently important to be accorded the same level of publicity. It could, for instance, be pointed out that even our relief and WPA people are existing under considerably better conditions than is the average German citizen living in Germany. However, it is not our purpose in this column to assemble refutations to Hitler's propaganda. What we are interested in and think to be of paramount importance is that the people of this democratic nation should seriously consider whether or not any of the conditions prevail here which led to the development of Nazism. If threats to the democratic way of life exist in America vigorous steps should be taken to correct

them. No fertile soil should be permitted in America upon which the seeds of Nazi propaganda as strewn to the world by Hitler might find lodgment and take root.

Survival of our democracy depends in no small way upon the maturing beliefs and convictions of the children of today who will be the citizens of tomorrow. They will be satisfied with their present economic and social system only so long as they are convinced that no other system would offer them as many advantages. If millions of American children continue to live under the handicap of economic insecurity, through no fault of their own, danger to our democratic institutions certainly exists. According to the White House Conference on Children in a Democracy, "Great inequalities have been discovered throughout the country in the available opportunities for children and youth in rural areas, in low income groups, among the unemployed, among migrant workers and in various minority groups. Honest inquiry has uncovered conditions unworthy of our democracy and dangerous to its future."

The White House Conference on Children in a Democracy has held two meetings in Washington, one in April, 1939, and one in January, 1940. The various problems of vital concern to our youth have been studied, and a general report with recommendations has been issued.\* The report and recommendations deal with such items as families, religions, education, child labor, youth and its needs, child health and handicapped children. A National Citizens Committee and a Federal Inter-Agency Committee have been charged with responsibility for national leadership in a follow-up program. Follow-up organizations have already been definitely set up in fourteen states. For the most part these groups have been formed at the request of the governors of the various states. Included in the personnel are representatives of the major agencies concerned with the welfare of children. While committees function differently in the several states, in general their function is one of fact finding, of coordination and of making recommendations.

The possibilities inherent in this program of meeting the needs of the children in our democracy seem unlimited. We should like to see Iowa participate actively in such a project. Let us not merely talk about the advantages of democracy over totalitarianism; let us continue unceasingly to develop and demonstrate those advantages.

\*Children in a Democracy: General Report Adopted by the White House Conference on Children in a Democracy, January 19, 1940, Washington, D. C. For Sale by the Superintendent of Documents, Washington, D. C., twenty cents.

### PROGRESS ON THE NEW PHARMACOPOEIA

Two meetings of the members of the Committee of Revision have materially advanced the work of the Twelfth Revision during the past six months. During the recent meeting of the Revision Committee last October, many of the suggestions offered during the convention in May were discussed. Committee action was taken and each of the fifteen subcommittees held conferences to consider the details of monographs in their hands for revision. The recommendations of the Subcommittee on Scope are of special interest to physicians and pharmacists and these are presented for general information and criticism.

At the request of the General Chairman of the U. S. P. Committee of Revision, Dr. C. W. Edmunds, President of the Pharmacopoeial Convention, and Dr. Walter A. Bastedo, Chairman of the Subcommittee on Scope, have outlined the policy under which medicinal substances and preparations have been admitted to the Pharmacopoeia. This is as follows:

"The Subcommittee on Scope, which decides admissions and deletions for a new Pharmacopoeia, is primarily responsible for the value and usefulness of the book to the medical profession. The fundamental medical and pharmaceutical objectives of the Pharmacopoeia from the time it was established have been to include a selected list of the best known and most thoroughly tested medicines of each revision period and also suitable usage or dosage forms or preparations of these important basic medicines. It has always been the aim of those responsible for the Pharmacopoeia that it should be so comprehensive as to meet every need of medical practice, insofar as there are efficient medicinal products and medical aids known and available.

"This principle of Pharmacopoeial admissions has been maintained and practiced since 1820 and was emphatically reaffirmed by the Subcommittee on Scope during the recent meeting of the Committee of Revision. When it is determined that a medicinal substance or preparation fails to meet the standard of therapeutic excellence or service required by the Revision Committee or when a patent situation intervenes, such a substance or preparation is denied admission to the Pharmacopoeia. This policy of the Pharmacopoeia of the United States is the basic policy for all Pharmacopoeias of the world. Under it is included any substance or preparation used in medicine which in the opinion of its experts is worthy of Pharmacopoeial recognition. Under this accepted policy, the Pharmacopoeia has been able to develop and maintain a unique voluntary service to medicine,

pharmacy and the public, a contribution recognized and accepted by the medical and associated professions, and the manufacturing drug industry, and adopted by state and federal legislation."

The medical profession is very fortunate in having as chairman of the Subcommittee on Scope, Dr. Walter A. Bastedo, who has been a teacher of materia medica and therapeutics for many years. He is the author of a valuable textbook on these subjects, and his opinions on admissions and deletions will be respected. It is to be regretted that physicians generally have not taken the proper interest in the late revisions as compared with earlier publications, but the Committee of Revision of the U. S. Pharmacopoeia XI to make the new U. S. Pharmacopoeia XII has on its membership list a good representation of intelligent and conscientious physicians, which will go far in making the revised Pharmacopoeia entirely satisfactory to the medical profession.

### MEDICAL PREPAREDNESS\*

Your State Committee on Medical Preparedness has been asked to prepare a list of the names of physicians from each county of the state whose services are believed to be necessary for the maintenance of civilian health and who should, in the opinion of the state committee on medical preparedness, be exempt from military service. This list must be submitted to the chairman of the Seventh Corps Area at an early date. Therefore, your committee met in Des Moines to discuss this list and decided that the group most competent to pass judgment upon the situation was the county committee on medical preparedness.

In accord with that decision, a letter has been sent to each county chairman giving the standards to be considered in making the determinations. This letter was sent to the county society secretary in those counties which have not yet appointed a committee on medical preparedness. Unfortunately, there are sixty-five such counties. These counties are urged to take immediate action in this respect, and to report the names to the state chairman, Dr. T. F. Suchomel of Cedar Rapids.

The state chairman appealed to the American Medical Association for advice on the compilation of such a list of physicians, and the following memorandum, sent by Dr. Leland, is so well stated that it is being quoted below:

#### Memorandum From Doctor Leland

"It is very difficult, if not quite impossible, for the administrative staff at the American Medical Association headquarters to state with certainty the amount and nature of medical services that

\*From the Committee on Medical Preparedness.



the civilian population will need during an emergency when large numbers of the physicians of the country are required for the medical care of the armed forces and the health supervision and medical care of industrial workers who are employed in expanding industries producing defense material.

"It is believed, however, that the key men in health administration, such as the health commissioners and directors of health department laboratories and such other key personnel as seems essential, should not be disturbed. Likewise, a selection should be made from hospital staffs of those physicians who are thought to be necessary for the continued operation of hospital services without deterioration.

"During periods of emergency, it is usually necessary for many persons or groups to undergo sacrifices and be willing to serve under new conditions. Thus, when a number of physicians have been removed from a community to serve with the armed forces, the physicians who remain may need to assume additional duties and will probably be required to care for more people than they ordinarily serve.

"It is necessary to determine locally the minimum number of physicians which are deemed necessary to care for the general and special services required in that community. It is believed that under these emergency conditions one physician might be expected to serve from 1,500 to 2,000 persons in the civilian population. This number cannot be used as a rigid measure of the minimum number of physicians since physicians themselves sometimes are ill and at other times epidemics create a very greatly increased burden on all available physicians.

"For specialist services the civilian population will probably need to depend on physicians in the larger centers of population. This will mean that during the period of an emergency, patients who require specialist services may need to travel longer distances to obtain them or the specialist may need to travel longer distances to serve those patients who are too ill to travel.

"The planning of home medical care during the withdrawal of many physicians for military service is the task of the county medical society. This task should be undertaken at once and not left until an emergency arises. Certain general considerations should be kept in mind in preparing for such situations as may arise as a result of preparedness:

1. It is generally thought that there should be at least one physician for every 1,500 to 2,000 of the population. Since both the demand for and

supply of medical service are subject to extreme fluctuations, due on the side of demand to seasons, epidemics, location of population and other less important elements, and on the side of supply to the health and capacity of the physicians, transportation facilities, and the possibility of sharing the burden, all these elements should be carefully considered in advance. One physician in a community with 1,500 persons is subject to far more uncertainties than four physicians in a community of 8,000 population.

2. The age and health of the physicians should be considered. If there is one physician already approaching the retirement age, the risks of total deprivation of medical care are much greater than if there are several physicians of somewhat varying ages and physical capacities.

3. The possibility of drawing upon medical resources from neighboring localities must be kept in mind. A small community within an hour's driving distance of a larger city with hospitals, laboratories, and ample facilities can risk dependence upon fewer physicians than a small city in an isolated location.

4. The medical facilities of a community must be considered as a unit. If physicians can call upon ample nursing facilities and have a hospital available, the capacity of the physician to serve the community is increased.

5. The possibility of epidemics must always be kept in mind. If emergencies are foreseen and prepared for their seriousness is greatly reduced. Preparation should be made in advance for any such emergency. The public should be educated through the press to realize that it will be necessary for them to suffer some inconvenience at least. They should be warned to visit physicians' offices rather than demand home calls where the latter are not necessary. Night calls especially must be avoided where possible, because they add to the already excessive strain of the physician's health and capacity to serve.

6. It is manifestly impossible to supply all communities with all types of specialists. The nearest place where such specialists are available should be ascertained and patients advised that in some cases considerable traveling may be necessary to obtain their services."

We believe that with the information contained in this memorandum and in the letter to the county chairmen, county committees will be able to determine which physicians should be exempt from military service, and which ones can be spared. This list should be sent to Dr. Suchomel by January 15, 1941, so that it may be reported to the chairman of the Seventh Corps Area.

## SPEAKERS BUREAU ACTIVITIES

The Speakers Bureau Committee wishes to extend its sincere thanks to the profession throughout the state for the success attained in making its work outstanding for the past year, and especially to the lecturers and local chairmen of the postgraduate medical courses for their time and effort spent to achieve the success of these courses. The Committee is also grateful to those physicians who have presented programs for county medical society meetings, to those who have given talks before the many lay groups, and to those who have helped make our weekly radio broadcasts worthwhile. It is our desire that we may call on these physicians again in the coming year and that we may add many more to the group who evidence such splendid cooperation.

The Committee has been pleased with the response from county medical societies to the announcement regarding the available scientific recordings, and is anticipating a rapid advancement of this project. New recordings are being produced at the present time and arrangements have been made to record several additional postgraduate medical talks during the next two or three months. These will be added to the collection in the central office as they become ready for use. The societies which have used this means of distributing medical information have been most generous in their comments. Members of the smaller societies especially welcome this opportunity of hearing lectures by outstanding authorities in the field of medicine, since many times these men could not be obtained personally. We feel that the medical profession in Iowa is to be congratulated on its progressive attitude in striving to keep informed of the latest advancements in medicine. Iowa is pioneering in this new phase of postgraduate medical instruction, and for that reason constructive criticism and comments will be greatly appreciated by the Speakers Bureau Committee so that the project may be carried on as efficiently as possible.

In an effort to convey to the profession of Iowa the extent of the Speakers Bureau work during the past year, we have assembled approximate figures for the various activities. These compilations evidence the progress made in each field of endeavor.

### 1940 SPEAKERS BUREAU ACTIVITIES

Number of Scientific Recordings sent out for County Medical Society Meetings.....	4
Number of Round Table Discussions arranged for County Medical Society Meetings.....	20
Number of Medical Talks arranged for Lay Groups.....	90
Number of County Medical Society Programs arranged (Physician Hours of Instruction not determined) .....	62
Number of Radio Talks arranged.....	113
Number of Postgraduate Medical Lectures (2 Hours).....	85
Approximate Number of Physician Hours of Postgraduate Course in Medical Instruction.....	6,788

### SPRING POSTGRADUATE MEDICAL COURSES

Time is getting short for the county medical societies to communicate with the Speakers Bureau regarding spring postgraduate medical courses. The spring schedules are now being arranged and any society interested in having a postgraduate medical course should write immediately to the Bureau at 505 Bankers Trust Building, Des Moines, Iowa, in order to allow sufficient time for necessary arrangements.

### RADIO SCHEDULE

WSUI—Tuesdays at 1:30 p. m.

WOI—Wednesdays at 2:45 p. m.

Jan. 7-8	Fractures and Their Emergency Care, Everett M. George, M.D.
Jan. 14-15	Modern Concept of Pneumonia, T. Edward Kane, M.D.
Jan. 21-22	Winter Ills and How to Avoid Them, James W. Chambers, M.D.
Jan. 28-29	Appendicitis, Frank R. Peterson, M.D.



# WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*  
5822 North Waterbury Road, Des Moines

*President*—MRS. ELBERT T. WARREN, Stuart

*President Elect*—MRS. W. R. HORNADAY, Des Moines

*Secretary*—MRS. FRED MOORE, Des Moines

*Treasurer*—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

## REPORT OF THE MEETING OF THE NATIONAL BOARD OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

The meeting of the members of the National Board of the Woman's Auxiliary was called to order at 9:00 a. m. November 29, 1940 at the Palmer House in Chicago, with eighteen officers and seventeen state presidents answering roll call. Several regional chairmen and past presidents attended the meeting. Mrs. Red of Texas, the first president of the Auxiliary, was present. Mrs. J. E. Purdue, president of the newly organized Ohio Auxiliary, brought greetings from her state and assured the members that Ohio would stand ready and willing to cooperate in plans for the national convention in June.

Mrs. H. E. Christenberry, circulation manager for the Bulletin, reported that Iowa's quota is approximately eighty-one subscriptions. Up to November 24, seventeen subscriptions had been reported. Only one state, West Virginia, has attained the quarter mark of its quota. Mrs. Christenberry urged the states to extend the circulation because disseminating Auxiliary News is one of the major aims of the year. "We cannot be fully interested in something of which our knowledge is limited." Those sending in subscriptions now will receive the fall Bulletin. This included pictures of both Dr. Van Etten, president of the American Medical Association, and Mrs. Holcombe, president of the Auxiliary, together with articles written by them. The winter issue will include pictures of and articles by Dr. Lahey, president-elect of the American Medical Association, and Mrs. Mosiman, president-elect of the Auxiliary. There will also be articles entitled "Why a County Auxiliary?" by Mrs. Arnold S. Jackson, "The Doctor's Auxiliary" by Dr. R. W. Fouts, and "Doctor's Check-up" from Mississippi Doctor, August issue.

Iowa's report was well received and there were many requests for copies of our program. The chairman of Press and Publicity, Mrs. Ewell, asked permission to publish Mrs. Chapler's book reviews in the Bulletin.

Dr. Bauer, director of Health Education of the American Medical Association, spoke of the radio program "Doctors at Work". This program is presented each Wednesday evening at 9:30 p. m. over the National Broadcasting Company blue network. Since this is a sustaining program, for which the stations

receive no remuneration, it may not be broadcast by all of them at that hour, but carried later as a transcription. Questionnaires are being sent out to find who listens to the program and why. We were urged to visit the radio station when we are in Chicago and see the broadcast.

Mr. Cargill, circulation manager of *Hygeia*, reported it had 111,000 subscribers. Eighteen thousand of these are doctors, 9,000 are received from the Auxiliary. Approximately 2,000,000 people read *Hygeia* in doctors' reception rooms. If a copy is carried away from a doctor's office, Mr. Cargill will replace it free of charge. We are urged to stress the value of *Hygeia* as a Christmas gift. Subscriptions may be taken for \$1.25 during the month of December. If you send in any, please ask that the Auxiliary be given credit. Mr. Cargill reported he had heard from every state chairman.

At the Board luncheon, Dr. Booth, chairman of the Board of Trustees of the American Medical Association, stated that the Auxiliary has tremendously helpful possibilities and responsibilities. He made several recommendations which were referred to a committee and will be presented to the pre-convention Board meeting for approval. Drs. Fenton, Sensenich and Bloss were also present and spoke encouragingly of the work the Auxiliary is doing. Dr. Van Etten gave an inspiring and witty address. He stressed the point that "Many fine intelligent women are giving their time to the organization." He urged taking part in Red Cross work, emphasizing the better feeling which comes for association around the bandage table. He said we should study sanitation and the handling of foods, develop a code of good food morals, that we should have directed physical training, and that we should all keep in mind the desirability of having a Secretary of Health in the President's Cabinet, that secretary to be a doctor of medicine. He said we must not allow virtue to overtake our organization, but must keep working and finding more work to do.

The Organization Chairman, Mrs. Werner, stated in her report that one Auxiliary which has been organized thirty years has just joined the State and National organization. The Public Relations chairman, Mrs. Raile, urged more "chatty" health programs. One state reported holding a public relations tea with presidents of various clubs. Several states reported

they had year books; Michigan reported their budget had been adopted; and Kansas reported giving the play "Can You Take It?" at their meeting.

All officers were urged to send on the material they receive, and to report at once the names of new officers and chairmen after the annual election. The president reported she had written over 2,000 letters. The president-elect stated she had been studying administration and urged that all state and county presidents do likewise.

On Thursday afternoon we were taken on a tour of the home of the American Medical Association. This is a trip one should not miss when visiting in Chicago. We were especially interested in the chemical laboratory in which the stamp of approval is placed on new drugs which are found to have a medical value. There is no charge for this stamp of approval. It was also very interesting to see how *Hygeia* and the *Journal of the American Medical Association* are compiled and printed, and to see the enormous amount of work entailed by the questionnaire on medical preparedness which was sent to all physicians this last summer. One hundred stenographers are employed in cataloging the information contained in the questionnaires, and the files necessary for it fill an entire room. The American Medical Association has 600 employees in the building, to whom union wages are paid. The Association issues no stock. I believe that the county auxiliaries might be interested in a program which explained the many activities and the physical make-up of the plant of the American Medical Association. A booklet giving such information is available at the supply department of the Association.

Mrs. E. T. Warren, President.

#### Polk County

The home of Dr. and Mrs. J. B. Priestley was opened to the Woman's Auxiliary to the Polk County Medical Society for a Christmas Tea, Monday, December 2. Mrs. E. T. Warren of Stuart, President of the Woman's Auxiliary to the Iowa State Medical Society, was an honored guest. Yuletide spirit was much in evidence by the many Christmas baskets filled with food, clothing and toys, brought by members of the Auxiliary.

Mrs. Henry G. Decker, Secretary.

#### NEW AUXILIARY ORGANIZED

Another new auxiliary unit was added to Iowa's increasing list of organized county organizations when the wives of the Adair County doctors voted to form an auxiliary to the Adair County Medical Society. The organization was effected Tuesday, December 10, following a dinner at the Hotel Greenfield in Greenfield. Mrs. E. T. Warren of Stuart, state president, was present to assist. The following officers were elected: Mrs. A. S. Bowers of Orient, president; Mrs. A. Jay Gantz of Greenfield, vice president; Mrs. Eugene Tinsman of Orient, secretary; and Mrs. L. H. Ahrens of Fontanelle, treasurer.

Mrs. Eugene Tinsman, Secretary.

#### BOOK NOTES

*Medicine Marches On* by Edward Podolsky, M.D., is as fascinating a book as one could hope to find on modern achievements in medicine. Dr. Podolsky discusses the historical background of medicine, surgery and psychiatry, and the development of such new instruments as the iron lung, recent surgical devices and methods of operation, and treatment for hitherto hopeless ailments.

The author was born in New York City in 1902; he is a graduate of Columbia University, the Boston University School of Medicine, interned in New York City, and is on the staffs of several large hospitals there. Internal medicine is his specialty and he now practices in Brooklyn. He is the author of many articles in both professional and lay periodicals and is considered an authority on medical history. Because of this imposing preparation, do not shy away from *Medicine Marches On* with the idea that it is too technical for pleasurable reading, because it was written primarily for the layman and will be found highly instructive as well as readable.

We will wager you did not know that flies are actually helpful in healing wounds; that nerve specialists have devised an operation which does away with all pain in certain cases of cancer, heart diseases and trifacial neuralgia; that a new drug has been discovered which actually melts away fat; that the radio knife now makes possible operations which could not be performed until the last decade; that a new type of machine can raise body temperature by means of radio waves and bake a syphilis-mad brain back to sanity; that an instrument called the electric pacemaker can revive a heart that has stopped beating; that stealing, cruelty and the desire to inflict pain are closely related to sexual desire; that a toad's skin and snake venom are the sources of two of our most effective medicines; that cancer is responding remarkably to the radium bullet.

These are only a few of the extraordinary facts which may be found in *Medicine Marches On*, and we have the feeling that it is as important to know about these saving scientific developments as it is to keep posted on the current war situation and the death-dealing devices which go with it.

Mrs. K. M. Chapler.

#### SPEAKERS BUREAU RADIO SCHEDULE

- WSUI—Tuesdays at 1:30 p. m.  
 WOI—Wednesdays at 2:45 p. m.
- |            |   |
|------------|---|
| Jan. 7- 8  | Fractures and Their Emergency Care<br>Everett M. George, M.D. |
| Jan. 14-15 | Modern Concept of Pneumonia<br>T. Edward Kane, M.D.           |
| Jan. 21-22 | Winter Ills and How to Avoid Them<br>James W. Chambers, M.D.  |
| Jan. 28-29 | Appendicitis<br>Frank R. Peterson, M.D.                       |



## SOCIETY PROCEEDINGS

### Bremer County

The combined monthly meeting of the Bremer County Medical Society and the staff of Mercy Hospital was held Monday, November 25, at the Fortner Hotel in Waverly. A motion picture film on Forceps and Breech Deliveries was shown at five o'clock, followed by a six o'clock dinner, after which H. Close Hesseltine, M.D., assistant professor of obstetrics and gynecology at the Chicago Lying-In Hospital, spoke on Chemotherapy (Sulfonamides) in Obstetrics and Gynecology.

The annual meeting of the Society was held Monday, December 9, at St. Joseph's Mercy Hospital. The scientific portion of the program consisted of moving pictures on Acute Injuries of the Jaw, and a lecture on Infections and Other Pathologic Conditions of the Mouth, by Fred Z. Havens, M.D., of the Section of Laryngology, Oral and Plastic Surgery, The Mayo Clinic, Rochester, Minnesota. The election of officers resulted as follows: Dr. L. D. Jay of Waverly, president; Dr. F. L. Vander Veer of Janesville, vice president; Dr. P. K. Graening of Waverly, secretary and treasurer; Dr. Graening, delegate; and Dr. Jay, alternate delegate.

P. K. Graening, M.D., Secretary

### Butler County

The Butler County Medical Society held its annual election Monday, December 9, in Allison, with the following results: Dr. H. G. MacLeod of Greene, president; Dr. F. A. Rolfs of Aplington, vice president; Dr. Roger James of Allison, secretary and treasurer; Dr. Bruce Ensley of Shell Rock, delegate; and Dr. J. G. Evans of New Hartford, alternate delegate.

### Cerro Gordo County

J. Arthur Myers, M.D., professor of internal medicine, preventive medicine and public health, University of Minnesota Medical School, Minneapolis, presented an illustrated lecture on The Pathology of Tuberculosis for members of the Cerro Gordo County Medical Society, at the regular meeting held Tuesday, November 19, at the Hotel Hanford in Mason City.

Speaker of the evening at the next meeting of the Society, held Tuesday, December 10, at the Hotel Hanford, was Adolph L. Sahs, M.D., assistant professor of neurology, State University of Iowa, College of Medicine, Iowa City, who addressed the group on Diagnosis and Treatment of Neurosyphilis.

### Chickasaw County

Members of the Chickasaw County Medical Society sponsored an invitational meeting in November, which was held at the Hotel Miller in New Hampton. John M. Waugh, M.D., of the Mayo Clinic, Rochester, spoke on Leukorrhea: Its Causes and Treatment. The local speaker was Hans Haumeder, M.D., of New Hampton, who gave a brief talk on Intestinal Fermentation. A good number of physicians of the surrounding territory were present to enjoy this interesting meeting.

M. Eva Haumeder, M.D., Secretary

### Davis County

Officers elected Friday, December 20, to serve the Davis County Medical Society during the coming year are: Dr. J. G. Stone, president; Dr. C. D. Shelton, vice president; Dr. H. C. Young, secretary and treasurer; Dr. C. H. Cronk, delegate; and Dr. G. W. Gilfillan, alternate delegate. All officers are of Bloomfield.

H. C. Young, M.D., Secretary

### Decatur County

The Decatur County Medical Society met with the staff of the Decatur County Hospital, at the hospital in Leon, Tuesday, December 3, for the following program: Diseases of the Pancreas, G. P. Reed, M.D., of Davis City; and Obstructions of the Bowels, W. Norman Doss, M.D., of Leon. The annual election of officers resulted as follows: Dr. E. E. Gamet of Lamoni, president; Dr. W. N. Doss of Leon, vice president; Dr. M. W. Rogers of Leon, secretary and treasurer; and Dr. G. P. Reed of Davis City, delegate.

### Dubuque County

The Dubuque County Medical Society held its annual meeting Tuesday, December 10, in Dubuque, and the following officers were elected for 1941: Dr. Henry C. Langworthy, president; Dr. John A. Thorson, first vice president; Dr. William R. Langford of Epworth, second vice president; Dr. Carl W. Smith, secretary; Dr. Frank W. Meyers, treasurer; Dr. John C. Kassmeyer, delegate; and Dr. R. R. Harris, alternate delegate. With the exception of Dr. Langford, all officers are of Dubuque.

### Fayette County

Dr. H. H. Wolf of Elgin and Dr. J. P. Gallagher of Oelwein, were elected president and secretary, respectively, of the Fayette County Medical Society at a meeting held in Oelwein, Wednesday, December 18.

### Franklin County

The Franklin County Medical Society entertained the doctors of Wright County at a moose dinner served at the Coonley Hotel in Hampton, Thursday, December 5. The moose had been shot by Dr. J. F. Martin of Latimer, on a recent hunting trip in Canada. At the business meeting the following officers were named to head the society during the coming year: Dr. W. R. Arthur of Hampton, president; Dr. F. H. Rodemeyer of Sheffield, vice president; Dr. W. L. Randall of Hampton, secretary and treasurer; and Dr. J. F. Martin of Latimer, delegate.

### Hardin County

The regular monthly meeting of the Hardin County Medical Society was held at the Winchester Hotel in Eldora, Tuesday, November 26. Following a six-thirty dinner, Elmer E. Kottke, M.D., of Des Moines, addressed the group on Common Cardiac Emergencies and Their Management.

W. E. Marsh, M.D., Secretary

### Iowa County

New officers for 1941 were chosen for the Iowa County Medical Society at a meeting held Friday, December 6, at the Doose Hotel in Marengo. They are: Dr. D. F. Miller of Williamsburg, president; Dr. C. H. Hermann of Amana, vice president; Dr. I. J. Sinn of Williamsburg, secretary and treasurer; Dr. H. G. Moershel of Homestead, delegate; and Dr. E. L. Hollis of Marengo, alternate delegate.

### Jasper County

Dr. Thomas D. Wright of Newton was named president of the Jasper County Medical Society at the annual meeting of that organization held in Newton, Tuesday, December 3, at the Skiff Memorial Hospital. Other officers include Dr. J. A. William Johnson of Newton, vice president; and Dr. Leon P. Adams of Newton, secretary and treasurer.

### Johnson County

Frank H. Krusen, M.D., chief of the division of physical therapy, The Mayo Clinic, Rochester, Minnesota, was guest speaker for the Johnson County Medical Society, at the meeting held Wednesday, December 4, at the Hotel Jefferson in Iowa City. Dr. Krusen spoke on Physical Therapy in Relation to General Practice.

R. J. Prentiss, M.D., Secretary

### Lee County

Members of the Lee County Medical Society met for their annual meeting Wednesday, December 11, in Keokuk. A short business meeting was held at the Graham Hospital at 4:30, after which Duff S. Allen, M.D., assistant professor of clinical surgery, Washington University School of Medicine, St. Louis, discussed the Effect of Thyroidectomy for Hyper-

thyroidism in Older People. The six-thirty dinner, served at St. Joseph's Hospital, was followed by two scientific addresses: The Use of Laminagrams in Otolaryngology, by Alfred J. Cone, M.D., assistant professor of otolaryngology, Washington University School of Medicine, St. Louis; and Hyperthyroid and Hypothyroid States in Children, by Stanley L. Harrison, M.D., instructor in clinical pediatrics, Washington University School of Medicine, St. Louis.

Election of officers resulted as follows: Dr. R. S. Reimers of Fort Madison, president; Dr. George H. Ashline of Keokuk, vice president; and Dr. Harold F. Noble of Fort Madison, secretary and treasurer.

### Linn County

Dr. Nathan B. Van Etten of New York, President of the American Medical Association, was an honored guest of the Linn County Medical Society, at a meeting held Thursday, December 12, at the Hotel Roosevelt in Cedar Rapids. Dr. Van Etten spoke on An American Health Program, and discussion was opened by Dr. F. P. McNamara of Dubuque, and Dr. E. M. MacEwen of Iowa City.

The next meeting of the Society will be Thursday, January 16, at which time Horace M. Korn, M.D., professor of theory and practice of medicine, State University of Iowa, College of Medicine, Iowa City, will present an address on The Nature and Manifestations of Congestive Heart Failure. Members of the State Society in surrounding counties are cordially invited to attend.

D. S. Challed, M.D., Secretary

### Madison County

On Tuesday, November 19, C. K. McCarthy, M.D., Director of the Division of Tuberculosis, State Department of Health, Des Moines, presented the scientific program for the Madison County Medical Society. He discussed the films in his very recent case-finding program in Madison county.

Evelyn M. Olson, M.D., Secretary

### Marion County

Members of the Marion County Medical Society met for dinner Thursday, December 19, at the Boylan Cafe in Knoxville, after which Julian M. Bruner, M.D., of Des Moines, presented an address on The Treatment of Varicose Veins.

J. R. Wright, M.D., Secretary

### Muscatine County

George O. Solem, M.D., of Chicago, furnished the scientific program for the Muscatine County Medical Society when that organization met Thursday, December 12, in Muscatine for the annual election of officers. Dr. Solem spoke on Gastro-intestinal Dysfunction. Results of the election are: Dr. T. M. Miller, president; Dr. E. O. Muhs, vice president; Dr. J. L. Klein, Jr., secretary and treasurer; Dr. L. C. Howe, delegate; and Dr. G. A. Sywassink, alternate delegate. All officers are of Muscatine.



### Pottawattamie County

Newly elected officers of the Pottawattamie County Medical Society include Dr. Robert M. Collins, president; Dr. E. B. Floersch, vice president; and Dr. E. M. Limbert, secretary and treasurer. All officers are of Council Bluffs. The meeting was held in Council Bluffs, Thursday, December 12.

### Sac County

The Sac County Medical Society held its regular monthly meeting at Park Hotel, in Sac City, Thursday, December 5. Twenty doctors from Sac and adjoining counties attended. The speaker of the evening was Edmond M. Walsh, M.D., assistant professor of medicine, Creighton University School of Medicine, Omaha, and his subject was Differential Diagnosis and Management of Anemias. His address was well received and prompted much discussion. At the business meeting, Dr. R. J. Ferlic of Lake View was accepted as a new member of the Society. The annual election of officers was held with the following results: Dr. C. D. Gibson of Lake View, president; Dr. W. I. Evans of Sac City, secretary and treasurer; Dr. L. B. Amick of Sac City, delegate; and Dr. A. A. Blum of Wall Lake, alternate delegate.

H. N. Neu, M.D., Secretary

### Scott County

Dr. Howard A. Weis was elected president and Dr. Harry H. Lamb, president elect of the Scott County Medical Society at the meeting held Tuesday, December 3 at the Lend-A-Hand Club in Davenport. Other officers are: Dr. H. J. Evans, vice president; Dr. J. H. Sunderbruch, secretary; Dr. T. W. McMeans, treasurer; Dr. George Braunlich, delegate; and Dr. L. V. Schroeder of Walcott, alternate delegate. With the exception of Dr. Schroeder, all officers are of Davenport. The speaker of the evening was Carl V. Moore, M.D., assistant professor of medicine, Washington University School of Medicine, St. Louis, who discussed Practical Considerations Governing Iron Therapy.

P. E. Gibson, M.D., Secretary

### Story County

The annual meeting of the Story County Medical Society was held at the Mary Greeley Hospital in Ames, Tuesday, December 10, with the following physicians chosen to head the group for 1941: Dr. Kenneth C. Piercy of Ames, president; Dr. O. L. Thorburn of Ames, vice president; Dr. W. B. Armstrong of Ames, secretary and treasurer; Dr. G. E. McFarland, Jr., of Ames, delegate; and Dr. Bush Houston of Nevada, alternate delegate.

### Van Buren County

Officers elected by the Van Buren County Medical Society at a meeting held Thursday, December 12 at the Hotel Manning in Keosauqua, are as follows:

Dr. Roscoe Pollock of Douds, president; Dr. James A. Craig of Keosauqua, vice president; Dr. E. E. Sherman of Keosauqua, secretary and treasurer; Dr. L. A. Coffin of Farmington, delegate; and Dr. J. W. Webb of Bonaparte, alternate delegate.

### Wapello County

At a noon luncheon meeting Friday, December 6, Ballingall Hotel, Ottumwa, new officers for the Wapello County Medical Society were elected as follows: Dr. L. H. Prewitt of Ottumwa, president; Dr. E. B. Hoeven of Ottumwa, vice president; Dr. G. C. Struble of Ottumwa, secretary and treasurer; Dr. C. A. Henry of Farson, delegate; and Dr. Hoeven, alternate delegate.

### Washington County

The Washington County Medical Society held its annual business meeting Tuesday, December 17 in the private dining room of the North Side Cafe in Washington. After a six-thirty dinner the following officers were elected to serve during 1941: Dr. N. J. Lease of Crawfordsville, president; Dr. E. E. Stutsman of Washington, vice president; and Dr. W. S. Kyle of Washington, secretary and treasurer. John W. Dulin, M.D., assistant professor of surgery, State University of Iowa, College of Medicine, Iowa City, gave a lecture on fractures, illustrated with lantern slides.

W. S. Kyle, M.D., Secretary

### Wayne County

The present officers of the Wayne County Medical Society were unanimously re-elected to serve for the coming year, at the annual meeting of the Society held Tuesday, December 10 at the Elinor Tea Room in Corydon. They are: Dr. D. R. Ingraham of Sewal, president; Dr. C. F. Brubaker of Corydon, secretary and treasurer; Dr. A. E. Davis of Seymour, delegate; and Dr. J. H. McCall of Allerton, alternate delegate.

### Woodbury County

Dr. Warren Z. Earl of Sioux City was selected to head the Woodbury County Medical Society in 1941 at the annual meeting held Friday, December 13 at the Mayfair Hotel in Sioux City. Other officers are: Dr. C. F. Berkstresser, vice president; Dr. W. K. Hicks, secretary and treasurer; Dr. H. I. Down, delegate; and Dr. W. H. Gibbon, alternate delegate.

### PERSONAL MENTION

Drs. Royal F. French and Edwin Cobb of Marshalltown have announced the association of Dr. Ralph C. Carpenter with them in the practice of ophthalmology and otolaryngology. For the past four years Dr. Carpenter has been an associate in the department of otolaryngology and oral surgery

at the State University of Iowa, College of Medicine, Iowa City, and head of the department of bronchoscropy at the State Tuberculosis Sanatorium at Oakdale.

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**Dr. Roland T. Rohwer** of Sioux City, addressed the Sheldon Kiwanis Club, Monday, November 18, on "The Business Man and His Heart".

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**Dr. Daniel J. Glomset** of Des Moines, was recently appointed state consultant for the health improvement program being sponsored by the National Youth Administration for Iowa and the Iowa State Department of Health.

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**Dr. Howard L. Van Winkle** of Cedar Rapids, was guest speaker for the Marion Lions Club, Tuesday, November 19. His subject was "Public Immunization".

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**Dr. Emanuel Brentan** of Moline, Illinois, has opened offices in Ottumwa, where he will begin the practice of medicine. He was graduated in 1939 from the State University of Iowa, College of Medicine, Iowa City, and completed his internship at St. Mary's Hospital in Grand Rapids, Michigan.

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**Dr. Edward W. Anderson** of Des Moines, discussed "Heart Disease in the Business Man" for members of the Creston Rotary Club, Monday, December 2.

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**Dr. Ernest J. Thierman** of Cedar Falls, has retired from active practice, after thirty-six years of service. His place will be taken by Dr. Martin G. Ericsson, formerly of Long Prairie, Minnesota. He was graduated in 1934 from the University of Minnesota Medical School, Minneapolis.

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**Dr. Nathaniel G. Alcock** of Iowa City, spoke before the Stephenson College Medical Society in Freeport, Illinois, Thursday, December 19, on "The Value of Urologic Findings in the Diagnosis of Abdominal Tumors".

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**Dr. Willard W. Hayne**, formerly of the State University of Iowa, College of Medicine staff, and more recently of Holstein, has moved to Paullina, where he will occupy the offices of Dr. Chester L. Samuelson, who is leaving that vicinity for New York.

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**Dr. James H. Allen**, assistant professor of ophthalmology, State University of Iowa, College of Medicine, Iowa City, has returned from Boston, Massachusetts, where he recently conducted a course in ocular bacteriology at the Massachusetts Eye and Ear Infirmary.

Grants-in-aid for research have been received recently by the following staff members of the State University of Iowa, College of Medicine, Iowa City: Dr. Harry M. Hines of the department of physiology, \$5,000.00 from the National Foundation for Infantile Paralysis for the study of regeneration of nerve and muscle; Dr. W. D. Paul of the department of internal medicine, \$3,500.00 from the Emerson Drug Company for the study of the action of bromides; and Dr. Philip C. Jeans of the department of pediatrics, \$3,000.00 from Mead Johnson and Company, for a continuation of studies on infant nutrition.

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## MARRIAGES

Miss Elizabeth Compton, daughter of Mr. and Mrs. Arthur M. Compton of Davenport, and Dr. Walter J. Balzer, also of Davenport, were married Saturday, November 30, in Trinity Cathedral in Davenport. Upon their return from a wedding trip they will live in Davenport where Dr. Balzer is engaged in the practice of medicine.

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The marriage of Miss Jane Elizabeth Cray of Lime Springs and Dr. Abner Buersh of Lime Springs took place Thursday, November 28, at the Methodist Church in Lime Springs. After a short wedding trip to Nebraska they will return to Lime Springs where Dr. Buersh has been practicing for the past two years.

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## DEATH NOTICES

**Bickley, Carl Clifford**, of Waterloo, aged fifty-eight, died December 18 of coronary thrombosis. He was graduated in 1906 from The Hahnemann Medical College and Hospital, Chicago, and at the time of his death was a member of the Blackhawk County Medical Society.

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**Cowen, Joseph Merle**, of Glenwood, aged thirty-five, died instantly December 9 in an automobile accident. He was graduated in 1933 from the University of Nebraska College of Medicine, Omaha, and at the time of his death was a member of the Mills County Medical Society.

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**Decker, John Joseph**, of Sioux City, aged thirty-six, died December 18 as the result of injuries received in an automobile accident three weeks earlier. He was graduated in 1931 from the University of Wisconsin Medical School, Madison, and at the time of his death was a member of the Woodbury County Medical Society.



# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. TOM B. THROCKMORTON, Des Moines

DR. JOHN T. MCCLINTOCK, Iowa City

DR. WALTER L. BIERRING, Des Moines

DR. R. T. LENAGHAN, Clinton

DR. HENRY G. LANGWORTHY, Dubuque

## The History of Medicine in Buchanan County

F. F. AGNEW, M.D., and

A. G. SHELLITO, M.D., Independence

The history of medicine in Buchanan County dates from the early spring of 1842 when a hunter by the name of William Bennett arrived at the present location of the village of Quasqueton. He was fascinated by the scenery and built for himself a log cabin which was the beginning of a rapidly growing settlement. Among the early arrivals was one Dr. Lovejoy, then Edward Brewer who became the first practicing physician. The following year both doctors came to Independence. Dr. Lovejoy died in 1848, leaving Dr. Brewer the only physician in the vicinity, in which situation he carried on for a number of years. All of his years of practice were spent in Independence. He built what was at that time a very imposing residence in the northeast part of the town, which is still standing and in a good state of preservation. He had two sons who carried on an extensive abstract business until about fifteen years ago.

A Dr. Wright was the third physician to locate here and soon came Dr. Hiram H. Hunt, a very alert, witty man who carried on until a ripe old age. He served as a surgeon in the Civil War, returning to take up his work. He was very widely known and the medical adviser over a wide territory. One son also studied medicine and was one of this county's most respected citizens.

During the winter of 1867-68 the Honorable W. G. Donnan, state senator from this district, introduced a bill in the legislature asking for the sum of \$125,000.00 for the purpose of building a hospital for the insane at this place. The bill was warmly received and quickly passed in both houses. Money to purchase the site was raised

by popular subscription among the citizens. The bill carried with it the appointment of a commission by whom the building program was carried on. This board consisted of three men, Maturin G. Fisher of Clayton County, E. G. Morgan of Webster County and Albert Clarke of Buchanan County. The management of the institution was by a board of trustees which consisted of the following members: Maturin G. Fisher, president; Rev. John M. Boggs of Independence, secretary, and George Bemis of Independence, treasurer. Other members were E. G. Morgan, of Fort Dodge; Mrs. Prudence Appleman, of Clermont; Dr. C. C. Parker, of Fayette and T. W. Fawcett, of Clarion.

Dr. Albert Reynolds of Clinton was selected as the first superintendent with Dr. Willis Butterfield as his assistant. Dr. Butterfield later resigned, and Dr. Gershom Hyde Hill succeeded him. Dr. Hill later was advanced to the superintendency which position he held until he resigned in 1902, to establish The Retreat in Des Moines. Dr. W. P. Crumbacker of Ohio was selected to fill the vacancy, carrying on until his death in 1920. About this time, through legislative action, a Board of Control of state institutions was established, the management being taken over by them from the trustees. Dr. Robert A. Stewart, then assistant superintendent at Mt. Pleasant, was selected by this board to become the head of the Independence State Hospital, which position he still holds.

One of the important fixtures of the institution is Dr. George Boody who has been an efficient, faithful physician on the staff for more than forty years, and one whose skill in psychiatric diagnosis and treatment is equalled by few. The

present assistant superintendent is Dr. John Barton, a young man well grounded in his work and with a promising future. For a large crowded institution, operating on the budget plan, the Independence State Hospital is a marvel of discipline, neatness and up-to-the-minute care of the mentally ill, which speaks well for the management. Many physicians have been connected with the hospital staff during its long period of existence, some of whom have become very eminent in their chosen field of labor.

It lacks but two years of being a century since the arrival of the first physician in this county. During this time many have added their bit to medical history. Probably the most outstanding among them in his time was Dr. Griffith B. Ward of Fairbank. He made it a practice to put in at least fifteen minutes in study no matter how busy the day. He was an alert thinker, a keen diagnostician and an unusually capable surgeon, having been one of the first to suture a large artery which was completely severed and obtain a good result. His father was a pioneer physician, one brother was a physician and two sons and a grandson followed in his footsteps. Probably no one family in this part of the country has added to medical history as has the Ward family, three of whom are still in active practice.

The following is a list of the real "horse and buggy" doctors, the real pioneers in medicine in this county, the "family doctors". One rather unique situation was that of Dr. N. W. Johnson who located in Quasqueton in 1904, the site of the first settler in this county and the first physician in this unbroken wilderness. He practiced largely single-handedly over a vast territory where resided many lawbreakers and derelicts, and it has been often remarked that no other individual could keep this group in line as did Dr. Johnson. He was clever and crafty, and proved himself capable of meeting all emergencies and these were by no means few. He was a regular attendant at his county medical society meetings, taking an active part and quick to adopt the real advances in medical practice. Dr. Johnson served his country in the first world war as a captain in the medical corps. Always cheerful, he was a regular fellow, admired by his professional associates, an incessant worker, successful in business ventures as well as in practice. On September 17, 1933, after a long day he was stricken while at the supper table. His loss to his community will never be replaced.

What can be said of any one of these men may be said of most of them, for all had their difficult problems to meet and solve; always they were

on duty and ready to accept any call, working countless hours without rest or compensation and in most unfavorable surroundings, traveling day and night in all kinds of weather and under severe handicaps, quietly dealing out charity to the needy and always with a stern determination that none who needed and desired their services should be deprived of them. These are the men who blazed the trails that we might follow.

Who is there among us who would say that any form of government controlled medicine is comparable to the example set for us by these grand old men? The profession today is no less sincere than were these bold pioneers. The list of deceased physicians of this county reads as follows:

*Independence.* Edward Brewer, D. Lovejoy, George Parsons, Joseph Powell, George Warne, M. J. Panner, A. E. Matteson, Wallis Melon, John House, John Gates House, Horatio Bryant, Emery Sherman, D. P. Shattuck, S. G. Wilson, R. E. Buchanan, D. W. Howard, Dr. Powers, Dr. Hobbe, Philander Tabor, H. E. Markham, E. R. Jefferies, Homer Markham, D. Dwyer, H. R. Chandler, R. D. Parsons, Caroline Brooks Woodruff, Eugene May, Judd C. Shellito, Edward M. Sheehan, D. E. Douglas, A. M. Pond, A. W. Traut, Dr. Plunkett and Dr. Ramsey.

*Jesup.* H. M. Crayton, James Muncey, J. A. Ward, A. Wier, E. M. Harradon, F. E. Shimer, Edwin Moffatt and R. W. Allen.

*Hazleton.* B. M. Corbin, W. E. Baker, J. C. Girard, Fred Bain and Hiram H. Hunt.

*Littleton.* J. D. Caldwell and Robert Robb.

*Lamont.* Dr. Hoffman, Dr. Graves, J. A. Brady, J. H. Craig and Albert Collins.

*Brandon.* John Bain, Benjamin Muchmore, Everett Ward and M. J. Hyde.

*Winthrop.* M. A. Chamberlain, W. C. White, L. M. Johnson, M. L. Shine and G. B. Thompson.

*Quasqueton.* H. A. Dockham, George Sheffield, C. H. Osincup, J. W. Sifton and N. W. Johnson.

*Rowlev.* O. J. McCauley, Dr. Record, Dr. Chandler, Dr. Wade, Dr. Goff, Dr. Rusk, Dr. Knight, Dr. Sigworth, C. B. Rentz, L. M. Small and F. D. Walk.

*Aurora.* B. G. Bissell.

*Fairbank.* A. B. Ward, J. McGrath, G. W. Bothwell, Clyde Bothwell, Edward Molloy, Paul Logue, W. H. Dewey, J. H. Murphy, J. H. Wiltze and Griffith B. Ward.

*Otterville.* An herb doctor known as Dr. Mercer.

(To be concluded next month.)



**TOM MORFORD THROCKMORTON, A.M., M.D.**  
1852-1940

In the death of Dr. Tom Morford Throckmorton of Chariton on October 31, 1940, there passed from our midst one of the real pioneer physicians of Iowa, and we pause to offer tribute to the hardy and adventurous spirit that braved the wintry blasts, the mud roads and other hazards of the medical frontiers in this prairie state five and six decades ago.

Dr. Throckmorton was born in Waynesburg, Greene County, Pennsylvania, April 5, 1852, and came with his parents to Lucas County, Iowa, in 1854. After attending the public schools in Chariton, he entered Waynesburg College, Waynesburg, Pennsylvania in 1872, from which he later received the degree of Master of Arts. Following a two years' preceptorship with his uncle, Dr. William Simpson Throckmorton of Nineveh, Greene County, Pennsylvania, he matriculated at Jefferson Medical College, Philadelphia, from which he was graduated



TOM MORFORD THROCKMORTON, A.M., M.D.

March 10, 1877. He began the practice of medicine at Derby in Lucas County, remaining until 1888 when he moved to Chariton, where he continued in active practice until his retirement a few years ago.

The JOURNAL is fortunate in having a complete record of his long professional career since it appeared in the History of Medicine in Lucas County, published in August, 1933, and prepared by his son, Dr. Tom B. Throckmorton of Des Moines. Dr. Tom Morford Throckmorton exemplified the finest qualities of the country practitioner and family doctor, and contributed in no small measure to the progress of medicine in Iowa during more than fifty years of active service.

To Dr. Throckmorton was accorded the further rare privilege of a medical progeny extending into the third generation. Two sons, Dr. Tom B. of Des Moines, and Dr. Scott Lazear of Chariton, and one daughter, Dr. Jeannette Dean-Throckmorton of Des Moines, have each attained a high place in Iowa

medicine. A grandson, Dr. Tom D. Throckmorton, now serving a surgical fellowship at the Mayo Clinic, Rochester, is destined to carry on the medical traditions of the family. He is also survived by a brother, Dr. Robert F. Throckmorton of Des Moines, and a nephew, Dr. J. Fred Throckmorton, of Des Moines.

Our departed colleague was an honor to the Iowa medical profession and his memory will be revered by all who were privileged to know him and enjoy his fellowship. W.L.B.

**COLONEL FAIRCHILD DIES**

Dr. David S. Fairchild, retired colonel of the United States Medical Corps, was killed Monday, November 11, in an automobile accident near Waynesboro, Virginia. His wife, Mrs. Ella Brown Fairchild, was also fatally injured, although she survived for a few days. Dr. Fairchild practiced in Clinton, Iowa, prior to entering the army service, where he was chief surgeon for the Rainbow Division in Europe during the World War. He was a son of the late Dr. David S. Fairchild of Clinton, a pioneer physician, long active in medical literary circles.

**RESOLUTIONS OF MUSCATINE COUNTY  
MEDICAL SOCIETY**

In the death of Dr. E. K. Tyler we have lost a faithful physician, a wise counselor, a kindly man and a dear friend. The Society desires to express its great appreciation of these qualities, and enter upon its minutes this testimony to the memory of one who lived his life so well.

It is known that he was dominated by strong religious convictions, and he brought to every decision a sense of fairness which made his counsel worthwhile. As a physician he administered to the sick faithfully and unselfishly, and will long be remembered by numbers of his patients for his kindly and untiring efforts to do only good.

May Dr. Tyler be held in remembrance by the members of this Society for the honest, upright, kindly and unselfish life that he lived.

W. W. Daut  
L. C. Howe  
T. F. Beveridge

**SCIENTIFIC EXHIBITS  
for the  
ANNUAL MEETING**

Applications for space in the scientific exhibit section of the annual meeting should be sent at once to Dr. Lewis M. Overton, 505 Bankers Trust Building, Des Moines, Iowa. A certificate of merit will be awarded to the exhibit which in the opinion of the judging committee is thought to be outstanding. Any physician interested in preparing a scientific exhibit is urged to write Dr. Overton at once.

# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**LIQUOR, THE SERVANT OF MAN**—By Walton Hall Smith and Ferdinand C. Helwig, M.D. Little, Brown and Company, Boston, 1940. Price, \$2.00.

**THE FOOT AND ANKLE**—By Philip Lewin, M.D., associate professor of bone and joint surgery, Northwestern University Medical School. Lea and Febiger, Philadelphia, 1940. Price, \$9.00.

**PRINCIPLES OF HEMATOLOGY**—By Russell L. Haden, M.D., The Cleveland Clinic. Second edition, thoroughly revised. Lea and Febiger, Philadelphia, 1940. Price, \$4.50.

**ARTHRITIS AND ALLIED CONDITIONS**—By Bernard I. Comroe, M.D., instructor in medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1940. Price, \$8.50.

**TWELVE AGAINST ALCOHOL**—By Herbert Ludwig Nossen, M.D., New York. Harrison-Hilton Books, 420 Madison Avenue, New York, 1940. Price, \$2.50.

**MODERN DERMATOLOGY AND SYPHILOLOGY**—By S. William Becker, M.D., associate professor of dermatology and syphilology; and Maximillian E. Obermayer, M.D., assistant professor of dermatology and syphilology, University of Chicago. J. B. Lippincott Company, Philadelphia, 1940. Price, \$12.00.

**GETTING READY TO BE A MOTHER**—By Carolyn Conant van Blarcom. Fourth edition. The Macmillan Company, New York, 1940. Price, \$2.50.

**OBSTETRICS AND GYNECOLOGY**—Edited by Fred L. Adair, professor of obstetrics and gynecology, University of Chicago. Two volume illustrated set. Lea and Febiger, Philadelphia, 1940. Price, \$20.00.

**MANAGEMENT OF THE CARDIAC PATIENT**—By William G. Leaman, Jr., M.D., assistant professor of medicine, Woman's Medical College of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1940. Price, \$6.50.

**THE INJURED BACK AND ITS TREATMENT**—Edited by John D. Ellis, M.D., Chicago. Charles C. Thomas, Springfield, 1940. Price, \$5.50.

**PHYSICAL DIAGNOSIS**—By Ralph H. Major, M.D., professor of medicine, University of Kansas. Second edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price, \$5.00.

**THE NEW INTERNATIONAL CLINICS, Volume III, New Series Three**—Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1940.

**PHYSICAL DIAGNOSIS**—By William Nance Anderson, M.D., associate clinical professor of medicine, University of Southern California, School of Medicine, Los Angeles. Lea and Febiger, Philadelphia, 1940. Price, \$4.75.

**MEDICAL NURSING**—By Edgar Hull, M.D., clinical professor of medicine, Louisiana State University School of Medicine, New Orleans. F. A. Davis Company, Philadelphia, 1940. Price, \$3.50.

## BOOK REVIEWS

### THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS

By John B. Hawes, M.D., and Moses J. Stone, M.D. Second edition. Lea and Febiger, Philadelphia, 1940. Price, \$2.75.

This second edition is a concise and brief symposium of the present knowledge of tuberculosis. The authors have presented the new concepts of roentgenologic diagnosis and collapse therapy. They have included discussions of immunity, resistance, allergy and mental aspects of tuberculosis as new features.

The text is composed of twenty-four short chapters with timely discussions of history taking, local symptoms, physical examination, laboratory methods, treatment, complications, diet, collapse therapy, the heart in tuberculosis and senile tuberculosis. Each chapter has a summary which clearly reviews the material presented.

This volume is a very timely and practical evaluation of an important disease. J. W. C.

physical therapy in all phases and specialties of medical practice. In addition, as a special feature, Dr. Kovács has prepared an article on the use of physical therapy in chronic arthritis. Several articles by Iowa authors, including E. G. Linn of Des Moines, C. H. McCloy, Helen Foss and Margery Wagner of Iowa City, and L. J. Miltner of Davenport, have been reviewed in this volume.

The book is conveniently arranged in presenting the various types of physical therapy, and their use in various special conditions. It is highly recommended as a reference volume for all physicians who are interested in the use of physical therapy in treating their patients. E. M. G.

### PHYSICAL THERAPY FOR NURSES

By Richard Kovács, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. Lea and Febiger, Philadelphia, 1940. Price, \$3.25.

This volume is the second edition, thoroughly revised, of a textbook for nurses on physical therapy. The author is an outstanding authority in this field of medical treatment, being the first full professor of physical therapy at any medical school in the United States.

Each of the physical forces utilized in treatment is discussed concisely and thoroughly in an understandable manner. Frequent illustrations clarify the

### THE 1940 YEAR BOOK OF PHYSICAL THERAPY

Edited by Richard Kovács, M.D., professor and director of physical therapy, New York Polyclinic Medical School and Hospital. The Year Book Publishers, Chicago, 1940. Price, \$2.50.

Again this particular year book brings forward the best of the 1939-1940 literature regarding the use of



text. Now that nurses are constantly called upon to administer various physical measures, it is essential that they acquire a proper understanding of the physical forces and their application in treatment.

This book is an excellent manual of instruction for use in nurses' training curricula. E. M. G.

#### THE 1940 YEAR BOOK OF PUBLIC HEALTH

Edited by J. G. Geiger, M.D., Dr. P.H.,  
Director of Public Health, City and County  
of San Francisco. The Year Book Publishers,  
Chicago, 1940. Price, \$3.00.

Dr. Geiger has presented the Year Book series with a valuable addition in this, the first year book of public health. It is a compilation of abstracts of 421 articles on all phases of public health from the work of the most notable public health writers of this and other countries. The entire field of public health is covered in this book including communicable diseases, statistics, public health administration, industrial hygiene, health education, child hygiene, and many other phases.

A unique and most interesting feature of the book is the collection of comments by the author. These appear at the conclusion of about three-fourths of the abstracts and serve to give a valuable interpretation of the article from one who is really able to voice an opinion on the subject.

General practitioners and specialists in public health alike will find this book a very worthwhile reference. It is recommended to all who would really know what is being done in the broad field of public health. R. M. S.

#### MANAGEMENT OF THE CARDIAC PATIENT

By William G. Leaman, Jr., M.D., assistant professor of medicine, Women's Medical College of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1940. Price, \$6.50.

This book has been written by a man with a wealth of experience for the general practitioner. Its careful study will add much to his perfection in the diagnosis and treatment of diseases of the heart. So much rapid progress in our knowledge in all phases of heart affections makes it necessary but difficult for the doctor, who after all, has only twenty-four hours in the day, to keep abreast of them.

In this concise volume (655 pages) will be found twenty-four chapters dealing with the management of heart disease. The nomenclature of the American Heart Association is followed. After each condition is discussed, the author has inserted short histories

with the orthodiagram and electrocardiogram of actual cases. The chapter on electrocardiography is written and described so simply that the general practitioner may, with some time and study, be able to interpret them. Many figures and illustrations are spaced throughout the book in order to elucidate points. The heart is discussed from the standpoint of the surgeon, the obstetrician and the allergist. The physiology, the prescription of exercise, the diet, the senile heart and the social service problems are especially valuable.

This is a real book for the general practitioner to read and enjoy. E. B. W.

#### METHODS FOR DIAGNOSTIC BACTERIOLOGY

By Isabelle G. Schaub, A.B., assistant in bacteriology, department of pathology and bacteriology, Johns Hopkins University School of Medicine; and M. Kathleen Foley, A.B. The C. V. Mosby Company, St. Louis, 1940. Price, \$3.00.

On its title page this book is presented as a complete guide for the isolation and identification of pathogenic bacteria for medical bacteriology laboratories. It is intended for use as a manual of bacteriologic methods, incorporating the "tricks of the trade" of the bacteriologist. Theoretical discussions and explanations are avoided.

Its scope includes instructions for the cultivation of bacteria from clinical and autopsy material, day-by-day directions for the identification of organisms, methods for the serologic study of organisms and patients' sera, and formulas for culture media, stains and other preparations as employed at the Johns Hopkins Hospital and School of Medicine. The authors' objectives are attained by the presentation of difficult subject matter in concise, outline form, and by the use of many tables.

The book fills a definite need for a practical guide in clinical bacteriology. It is recommended particularly for use in hospitals, laboratories and clinics where the services of a full-time bacteriologist are not available. R. F. B.

#### A TEXTBOOK OF PATHOLOGY

By W. G. MacCallum, M.D., professor of pathology, Johns Hopkins University. Seventh edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price, \$10.00.

This seventh edition of a well recognized text of pathology contains a thorough discussion of all general pathologic processes of the human body. As the clinician acquires more knowledge of the human or-

ganism, so will he find a clearer concept of the pathology of disease. The study of pathology gives the clinician a new viewpoint.

The text is systematically presented in seventy-five chapters, including discussions on disturbances of body fluids, disturbances of carbohydrate, fat and protein metabolism, and of mineral metabolism. Five complete chapters are devoted to body defenses. Other chapters deal with inflammations, chemical injuries, obstructions to respiratory, urinary and circulatory systems, all infectious diseases, bacterial, fungous, spirochetal, virus and infestations. Four chapters describe the pathologic processes found in diseases of the blood and blood-forming organs. There is a clear evaluation of the pathology of the organs of internal secretions. Dietary deficiencies, bone dyscrasias, tumors of various origin, carcinoma, congenital malformations, and composite tumors are all given separate consideration. The final chapter is a general, timely and scientific discussion of tumors.

The volume is a splendid text for the clinician and student alike.

J. W. C.

#### THE DIAGNOSIS AND TREATMENT OF CARDIOVASCULAR DISEASE

Edited by William D. Stroud, M.D., professor of cardiology, University of Pennsylvania Graduate School of Medicine. F. A. Davis Company, Philadelphia, 1940. Price, two volume set, \$18.00.

These two volumes, edited by a national authority on heart disease, complete a gap in cardiologic literature by their intensive and thorough detail, their modern appraisal of what is known of heart disease, and their fifty-six contributors, including the editor, who are all nationally known cardiologists. These volumes contain every minute detail of all that has been accepted in the field of cardiology, one that is daily growing in complexity and importance.

Volume I is devoted to a survey of congenital defects, rheumatic fever, endocarditis, neuroses, syphilis, hyperthyroidism, lungs, kidneys, arrhythmias, trauma, pericarditis, hypertrophy, dilatation, valvular disease and the normal heart. The last two sections are replete with timely interpretations of electrocardiography and roentgenology.

Volume II deals with many interesting aspects of heart disease and includes digitalis preparations, deficiency disease, heart failure, surgery of the heart, quinidine, thyroidectomy, physical therapy, shock, hypertension and hypotension, arteriosclerosis and diseases of vessels.

These volumes will be a wealthy addition to the modern library of the internist, wherein he can seek reference and counsel.

J. W. C.

#### TREATMENT OF DIABETES MELLITUS

By Elliott P. Joslin, M.D., clinical professor of medicine emeritus, Harvard Medical School. Seventh edition, thoroughly revised. Lea and Febiger, Philadelphia, 1940. Price, \$7.50.

Dr. Joslin and his associates have compiled the experience of treating 19,000 patients with sugar in the urine. Along with this experience is reviewed the literature of diabetes, progress in diagnosis, physiology, pathology and treatment.

Such rapid changes in our knowledge of all phases of diabetes, especially of the insulins, make it imperative for the doctor to study this important subject. The chapter on vitamins and minerals is very helpful and the author's plan of dietary treatment is simplified. A chapter on hyperinsulinism is also included. It is easy to desugarize the patient who is an average diabetic individual, but the real problem is to keep the patient sugar free. This is attained by following the plan outlined in the book. Of the greatest importance is the prevention and care of complications. Each complication is separately discussed; causes, methods of onset, symptoms and treatment, as well as the harmful effect on diabetes, are emphasized.

The book should be read and its contents should be absorbed by doctors.

E. B. W.

#### PRACTICE OF MEDICINE

By Jonathan Campbell Meakins, M.D., professor of medicine, McGill University. Third edition. The C. V. Mosby Company, St. Louis, 1940. Price, \$10.00.

Dr. Meakins, in his third edition, has revised and brought up to date a book written on the practice of medicine, not for the specialist, but for the general practitioner.

The purposes of the volume are first, to aid him in that part of medicine which is most important, diagnosis; second, to give a clear picture of the morbid processes taking place in the body of the individual having the disease; third and most important from the standpoint of the patient, the treatment; and fourth, prevention or prophylaxis.

Illustrations and pictures, many of them in color, add much to the value of the book for the student as well as the practitioner who is daily trying to solve the various problems of medicine, because graphic description is much easier to grasp than word description. Each disease is clearly and fully discussed. The chapters dealing with diseases of the blood and diabetes are especially complete. References are found at the end of each chapter.

E. B. W.



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### NONSPECIFIC PROTEIN THERAPY IN OCULAR DISEASE\*

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Although parenteral injection of nonspecific protein has been used therapeutically for twenty-five years, the fundamental nature of the reaction and the means by which it is brought about remain unknown. In 1914, typhoid vaccine was first used intravenously in typhoid fever with excellent results. After it was found that typhoid fever could be treated equally well with colon bacillus vaccine, it was apparent that the benefits were due to the reaction caused by the injection, and that the effects were entirely nonspecific. It was soon found that a large number of substances caused the reaction, and it became a popular form of therapy for a host of diseases. This form of therapy was first used in the United States in 1916 when arthritis was treated with intravenous typhoid vaccine.

Although foreign protein therapy has lost some of its former popularity, it is still used in such conditions as typhoid fever, pneumonia, puerperal sepsis, arthritis, pelvic inflammations, central nervous system syphilis, other nervous diseases such as multiple sclerosis, peptic ulcer, certain infections of the skin, and some vascular conditions such as Buerger's disease. On the other hand, the popularity of foreign protein therapy in ophthalmology seems to be steadily increasing, until, at present, it has become one of the most valuable procedures in ocular therapy. It has been found to be almost indispensable in certain types of cases.

Since there has been very little animal experimentation on the mechanism and results of the reaction, the procedure remains largely empirical, its popularity resting on clinical results. The reaction varies from an almost imperceptible one to

extreme shock, the amount depending on the substance injected, dose used, method of injection and the number of previous injections. These factors affect the degree of reaction but the reaction remains fundamentally the same, no matter what substance is used.

The results of these injections are complex and the good effects are probably due to a combination of several factors. A prompt effect is exercised on the autonomic nervous system, in the splanchnic area a vascular dilatation taking place with contraction of the peripheral vessels, causing the chill. This is shortly reversed with a capillary dilatation. With the rise in temperature there seems to be a general stimulation of cellular activity as shown by changes in the blood. At first there is a short period of leukopenia, followed by a leukocytosis from 12,000 to 15,000. Chiefly polymorphonuclears, this seems to be accompanied by an increased power of phagocytosis. There is a definite rise in the antibody content of the blood, either from increased formation or an increased circulation of antibodies from the tissues. There is also a rise in the blood content of proteolytic and lipolytic enzymes. Another important factor is the local increase in the permeability of the capillary walls, particularly at the site of the lesions. The exact rôle of the fever is still doubtful; it may be only an unimportant manifestation of the reaction, or it might be the cause of the marked increase in the cellular activity, and on certain lesions it might have a direct beneficial effect. Of these many effects, the factor most important in any disease might vary with the lesion, the vasodilatation might be most effective in arthritis, an effect on activity of the gastric mucosa in peptic ulcer, and the change in capillary permeability and antibody content of the blood in an ocular lesion.

Because the fever is the most obvious and easily recorded manifestation, it is the best criterion as to the severity of the reaction. The very great majority of observers are in agreement that the therapeutic results to be expected are in direct

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proportion to the degree of the reaction. Although some patients improve even in the absence of a marked general reaction, we have all been impressed with the amazing results seen in occasional cases in which the reaction is so great as to cause some apprehension. We are not satisfied unless there is definite evidence of a generalized reaction and the dose is usually adjusted to bring this about.

Innumerable substances have been used to cause the reaction; the only thing most of them have in common is that they are proteins or protein derivatives and that they must be administered parenterally. They fall into six main classes: native proteins such as egg albumen, milk and caseins; serums, either normal serum or antitoxins; protein split products such as peptone and albumose; enzymes and tissue extracts; bacterial vaccines such as typhoid vaccine; and bacterial extracts. At present, only four agents are being used by us in foreign protein therapy; typhoid vaccine, typhoid antigen "H," milk and omnadin.

Ordinary skimmed milk is given intramuscularly, usually in the gluteal region after boiling and cooling. The first dose is usually five to eight cubic centimeters. This is increased by two to three cubic centimeters until ten to fifteen cubic centimeters are being given, the injection being repeated every two to three days. Milk is always available and inexpensive, but has the disadvantage of causing a marked local reaction which may be very painful. The intramuscular injection of milk usually excites a mild general reaction, consisting of fever of a few degrees with gradual rise, possibly a chill and some malaise. However, the general reaction may be entirely lacking. The reaction is in sharp contrast to the abrupt severe reactions following the intravenously administered typhoid products. There is some evidence that the cheaper grades of milk with a higher bacteria count are more effective.

Omnadin (Winthrop Chemical Company) is a mixture of protein substances obtained from non-pathogenic bacteria, various animal fats and lipoids derived from bile. The dose is two cubic centimeters injected intramuscularly every other day. Following its injection there is no general reaction, but there is some leukocytosis and rise in antibody content of the blood. Omnadin is used only in those patients who cannot be subjected to the shock of the other substances, but in whom some foreign protein effect is desired.

In our hands, typhoid vaccine has proved to be the most effective agent for producing the foreign protein reaction. As an initial dose for a healthy male, we usually use 50 million, for a female, 35 million. For a smaller individual this may be

reduced. For children between five and ten years of age, a dose of ten million may be used safely, and increased according to age. For subsequent doses, it has been found that doubling each successive dose, effectively keeps the injection at a reacting level. If a reaction is too severe, the same dose may be used, or only increased one-half. If there is practically no reaction, three times the dose may be used. The number of injections depends on the clinical response, but usually a maximum of six is given in a single course, the injections being given every other day. Any typhoid-paratyphoid vaccine, such as that used for active immunization against typhoid fever, can be used if it is properly diluted. A more convenient form is a typhoid vaccine marketed in vials of 2.5 cubic centimeters by Parke-Davis and Company, each cubic centimeter containing 1,000 million organisms. Using a tuberculin syringe, doses as small as 50 million of this preparation can easily be given without dilution. In smaller doses it is well to dilute with saline. This preparation is easy to obtain and administer; it leaves no local reaction. It gives an excellent reaction which can readily be controlled, since the size of the dose can easily be regulated. It has the great disadvantage that the reaction may be so severe that the patient should be under observation. This limits its use to the hospitalized patient. It should not be given in the office.

One of the chief problems of foreign protein therapy has been the lack of an agent that would give a satisfactory reaction and that could still be used safely in office and clinic. Such a substance is now available in Typhoid Antigen H (Eli Lilly and Company) which gives a very satisfactory foreign protein response without many of the undesirable symptoms. Typhoid bacilli contain several different antigens. One of these is known as antigen H, being present in the flagellae. If the organisms are killed chemically, this is retained, and can be prepared for intravenous administration. After intravenous injection, typhoid antigen H causes a prompt rise in temperature, but there is usually no chill and the patient does not feel as debilitated as after a comparable dose of typhoid vaccine. The dosage and method of administration are the same as for typhoid vaccine, although a slightly larger dose can be used.

The regulation of dosage is important in the use of typhoid vaccine and to a less extent in antigen H. It is a very definite advantage both of typhoid and antigen H that the dose can be varied from 5 million to 2,000 million. The initial dose of 35 to 50 million is slightly larger than that advised by most authors. This is done advisedly to secure good initial reactions. Many patients



would get a satisfactory reaction with 20 to 25 million, but the percentage of good reactions will be much better if 50 million are used and the reactions are not great enough to contraindicate this initial dose. Because each reaction decreases the patient's susceptibility to the protein, the dose must be increased with each injection. If the first dose is inadequate to produce a reaction, the following doses are also below the threshold. Thus, if a large initial dose is used, the whole series of reactions is more likely to be effective.

The choice of any particular agent for use in an ocular disease does not depend on the diagnosis or extent of the eye lesion, but entirely on the patient and the conditions under which he must be treated. Since a marked reaction is not only desirable but essential if the most benefit is to be received, it is easy to see why typhoid vaccine has been found to be the most valuable agent. If the patient is in good health and in the hospital, typhoid vaccine is the method of choice. If an effective but less marked reaction is desired, because the patient is not hospitalized or is not in good health, then antigen H is indicated. In children under five years of age, in whom intravenous therapy is not feasible, milk is used. Omnadin is used only in those cases in which all other agents are contraindicated.

After the injection of typhoid vaccine or antigen H, the patient is advised to remain in bed, and fluids are forced. Salicylates are discontinued during the next twenty-four hours, because this drug tends to suppress the rise in fever. Usually the discomfort and inconvenience to the patient are surprisingly small. However, it is well to explain to the patient what he may expect following the reaction.

From our experience we have no reason to believe that this form of treatment is dangerous to any degree. In the literature there have been a number of constitutional conditions suggested as definite contraindications, these being advanced arterial, renal or cardiac disease, allergic states of strong protein sensitivity, states of extreme exhaustion following prolonged illness, pulmonary tuberculosis active or quiescent, hemorrhagic conditions such as hemophilia or purpura, chronic alcoholism and marked nervous instability. Particularly in pronounced cases, we have observed the above contraindications, but we have seen only a few cases in which foreign protein therapy was thought to be contraindicated on systemic grounds. Even in elderly arteriosclerotic patients with post-operative ocular inflammation, this treatment has been used without complications. Most of the deaths recorded in the literature were in patients

in poor general condition, or were due to injudicious use of the treatment.

In 2,500 cases given 10,000 injections, reported from the Mayo Clinic, there were three deaths with unusual reaction in only fourteen cases, these being acute appendicitis, cholecystitis, enteritis, pleurisy, vascular thrombosis, iritis and acute glaucoma. These cases were chiefly arthritic and vascular patients, and the complications in eye patients would seem to be definitely less, since most of these patients are in good general health. In a few cases only will the rise in temperature be high enough or the symptoms severe enough to necessitate reduction of the reaction which can be controlled by cold sponges and salicylates. Several patients have been seen who have been given two to three times the desired dose through errors in calculation without any result other than a very effective reaction.

The focal reaction or activation of the local lesion immediately following foreign protein therapy is a well recognized phenomenon, the activity usually being transitory. The reaction may be similar to that occurring in tuberculin therapy. The activation of other foci of chronic inflammation, such as the appendix and the gallbladder as mentioned above, suggests that the focal reaction may be a form of the Schwartzman phenomenon. Definite focal reaction taking place in ocular lesions is so rare that it may be disregarded as a possible contraindication to the treatment.

We use the widest possible indications for foreign protein therapy. We believe that it may be indicated at times in any type of ocular inflammation and in certain conditions its use should be almost routine. It is only a supplementary treatment in any case and the usual methods of treatment should be instituted. Even if the ordinary methods of treatment are being used, foreign protein therapy should be tried early and should not be reserved as a method of last resort.

Foreign protein therapy has been found to be of greater value in inflammation of the uveal tract than in any other tissue of the body. The use of foreign protein tends to shorten the course and reduce the permanent damage of many of these inflammations. Although it is usually effective in a lesion anywhere in the uvea, the anterior portions in the iris and ciliary body usually respond more satisfactorily than the posterior choroidal lesions. In severe iritis and iridocyclitis, particularly in acute stages, the use of intravenous typhoid vaccine is almost routine. In the less severe cases it is not used unless the case is stubborn and does not respond to the usual management. Intravenous typhoid vaccine is used in a smaller per-

centage of cases of choroiditis, but it is a very valuable aid in many patients. It is valuable in any inflammatory lesion in the uvea, regardless of etiology, but lesions of gonorrheal origin seem to respond especially well. Foreign protein therapy is very effective in sympathetic ophthalmia, and is probably the therapeutic method of choice. Years ago the use of diphtheria antitoxin was suggested in this condition by Verhoeff, but typhoid vaccine is probably more effective.

Because the secondary aqueous has very many more antibodies than the primary aqueous, it has been suggested that the injection of the foreign protein be followed by a paracentesis of the anterior chamber. This allows the escape of many antibodies into the anterior chamber and is supposed to increase the effectiveness of the foreign protein reaction. This procedure has not been done by us except in cases of iritis with secondary glaucoma.

Next to iridocyclitis, foreign protein is most valuable in the management of ocular trauma; it has proved to be one of the most effective measures available for the treatment of posttraumatic infection and inflammation. Practically every case of ocular inflammation or infection following any penetrating wound of the globe should have the benefit of foreign protein therapy. It has proved to be so effective in infected cases that an injection is often given as a prophylactic measure to apparently uninfected cases of perforating injury. This tends to abort the infection in the pre-clinical stage before it has an opportunity to develop. On the same theory it has been suggested that foreign protein therapy be used twenty-four to forty-eight hours previous to any intra-ocular operation. Post-operatively it is used early in any eye in which there is any suggestion of beginning infection.

This method of treatment is very useful in the therapy of many forms of corneal inflammation. In corneal ulcer, particularly that of the hypopyon variety, foreign protein can be used with much benefit. It is particularly indicated in those ulcer cases in which there is associated intra-ocular involvement. Although the milder cases of interstitial keratitis or phlektenular keratoconjunctivitis do not usually need foreign protein therapy, it may be indicated in the severe cases. In the rarer types of deep corneal infiltration, such as keratitis profunda and disciform keratitis, this treatment is often useful.

About the only conjunctival disease in which foreign protein is indicated is gonorrheal ophthalmia, either in the infant or the adult. Since the advent of sulfanilamide, the cases in which foreign protein is needed are much fewer, but any case

with corneal involvement should have the advantage of this additional treatment. In the infant one to two cubic centimeters of milk, and in the adult typhoid vaccine, should be used.

Optic neuritis and retrobulbar neuritis are usually puzzling, both from the etiologic standpoint and from that of effective therapy. Practically, foreign protein has been found to be of value in many cases. Theoretically, it is indicated, not only because of its known effect in inflammatory lesions, but also because these conditions are in many instances a manifestation of multiple sclerosis, a disease in which foreign protein is often effective.

We have no figures to present in a statistical review of the results of our cases, but anyone who has followed a large number of such cases cannot help but be convinced of its value. There are the few patients who have almost a miraculous result from a single injection, but the majority showed a less marked but definite improvement. Of course, there is also a definite number which must be classed as failures, since no benefit was noted. In this class are very many of the cases that failed to get a satisfactory reaction. In general, it can be estimated that about one-fourth of the cases have an excellent result, one-half are definitely improved and one-fourth are failures.

Although this discussion is limited to a consideration of foreign protein therapy, some comparison to the induced fever therapy, as done with the hypertherm, should be included. Although the most obvious result of each is the fever, the factors involved are different. In the induced fever all the results must be due either to a direct effect of the fever on the organism, or a secondary effect of the fever on the defenses of the body. Foreign protein accomplishes both of these, plus all the effects that might be due to the actual injection of the protein. Even though the induced fever of the hypertherm is higher and more prolonged, we believe that the foreign protein is theoretically better. We have tried this hypertherm treatment on a number of cases, but considering the relative cost, the availability and the danger and discomfort to the patient, we believe foreign protein therapy is much to be preferred.

In closing we wish to emphasize the following points; that foreign protein therapy is a very effective treatment in ocular inflammation, particularly of iridocyclitis and ocular trauma; that it is easy to use and not dangerous; that large enough doses should be given to cause definite general reactions; and that typhoid vaccine is the most effective agent, although typhoid antigen H is an effective means of using foreign protein therapy on the office patient.



## THE FUNDUS IN HYPERTENSIVE VASCULAR DISEASE\*

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During the past decade the ophthalmologist, as well as the internist and neurosurgeon, has become more interested in the syndrome of progressive hypertensive vascular disease. The result has been earlier diagnosis, a better understanding of the underlying pathology and some advance in therapy. The ophthalmologist has been increasingly consulted to observe the retinal circulation in order to assist in evaluating the state of the disease and the prognosis. According to the ultimate fate of the patients, the disease may be divided into three groups; approximately 45 per cent die of cardiac failure, 45 per cent of cerebral accidents and 10 per cent of uremia. The last group although small is usually of greatest interest to the oculist because of the presence of retinitis, but changes in the blood vessels are recognized ophthalmoscopically in all groups.

The initial change that is observed with the ophthalmoscope in hypertensive vascular disease occurs in the smaller arterioles of the retinal circulation. On inspection of the fundus, it is noted that the small peripheral blood vessels are less prominent because of narrowing of the blood stream and decreased length of the arterioles. Close observation reveals that the narrowing is not regular but greater in some places than in others. There may be small irregularities that give the appearance of a string of beads or wider areas in which the vessel is uniformly constricted for a greater or lesser portion of its length. This early change in the blood vessels is considered by most observers to be spastic and is supposedly the typical vascular condition during the initial stage of the disease. Proof of the spastic nature is occasionally obtained when the observer actually sees the vessel change its caliber during the period of examination. Other early evidence of the disease consists of phenomena due to physical change in the wall of the arteriole, that is, white lines lying adjacent to the column of blood, and increase in the prominence of the light reflex on the arterial wall. Neither of the last two signs, when existing alone, is as significant as the irregularity in the vessel caliber, for they may occur in the absence of hypertension. Engorgement and prominence of the small veins in the macular region are very often associated with early arteriolar disease and may be the signs which lead one to closer inspection of the terminal arterioles.

After the spastic stage of the disease has persisted for some time, gradually increasing organic change in the walls of the blood vessels consisting of the deposition of hyalin in the media and proliferation of the intima makes the caliber changes permanent. The white lines along the vessel then become more pronounced, and the translucency of the arteriole is lost. The irregularity in the caliber remains and its appearance is little different from the earlier state. With further progression the vessels develop increasing tortuosity which frequently is characterized by angular bending rather than smooth curves. Gradually as the process becomes more widespread, even the larger vessels show increasing evidence of the vascular disease.

It is necessary to remember that all changes in the blood vessels occur gradually and that there are many stages between the normal and the most advanced degree. In the beginning the changes are so slight that they are not differentiated from the normal, but gradually the caliber and extent of the vascular tree diminish. With progression, the smaller vessels become almost invisible and the more central vessels assume the constricted appearance which is typical of the early changes in the arterioles. In the very marked case, the thready arterioles are distinguished with difficulty and the arteries are small and irregular.

Since the transition between spastic and organic change is a gradual one, it is difficult if not impossible to determine ophthalmoscopically in each case whether the changes are of a permanent nature. In general, however, the more obvious the vascular change, the greater the probability that intimal proliferation and hyaline degeneration of the media has occurred. Thus irregularity in the caliber and narrowing of the larger arteries, accompanied by profound thinning of the arteriolar system, is excellent evidence that the process has reached an advanced stage with permanent changes in the vessels, while minor vascular constriction in the peripheral arterioles or the observation of a spasm or its relaxation is certainly indicative that the disease is still in an early stage.

Retinitis, when it occurs, is an extreme manifestation of the disease, but the largest percentage of hypertensive patients show throughout their entire course only the vascular phenomenon. Approximately ten per cent develop a definite retinitis with hemorrhages and edema of the nerve head and retina, while a small percentage in addition will have occasional retinal hemorrhages during some stage of the disease.

The development of a retinitis may be gradual or relatively sudden. Usually the first objective indication of involvement of the retina is a slight

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edema of the nerve head. Concurrently or following this an occasional hemorrhage may be noted and the presence of a small indistinct grayish-white area in the retina of the posterior segment will indicate the beginning of a cotton-wool area of degeneration. With progression, the edema of the nerve head and retina increases and more areas of degeneration develop, so that in the advanced condition the retina is greatly thickened, cotton-wool areas are plentiful, and the vascular tree is almost obliterated. Although flame-shaped hemorrhages are present, they are not a conspicuous feature of the retinitis for they are usually neither numerous nor extensive. In the macular region one may find the star or fan-shaped figure so often considered typical of nephritis, but its presence has no particular diagnostic or prognostic significance. Retinal detachment may occur with the extensive retinitis in the terminal stages of a hypertensive uremia.

The onset of a retinitis seems to indicate the initiation of kidney decompensation and uremia. In some cases the retinal findings may precede the elevation of blood nitrogen and clinical signs of uremia, but in general the fundus will indicate the degree of nitrogen retention. Clinical improvement or regression will be reflected in the fundus by periods of diminished or increased retinal changes. The rapid onset of a retinitis usually indicates a rapidly terminating uremia, while in slowly developing retinitis the progression extends over a period of years with death eventually resulting from cardiac failure or cerebral accident.

In hypertensive patients, failure of vision may result from a retinitis, a cerebral accident or an occlusion of the central artery or vein. In a retinitis or vascular occlusion, the diagnosis is obvious from ophthalmoscopic examination. When loss of vision follows a cerebral accident, it is usually necessary to chart the visual fields in order to establish the etiologic relationship. A homonymous hemianopsia is the usual finding and is due to hemorrhage in the internal capsule or optic radiations.

In general, the vascular changes in the fundus are in proportion to the blood pressure. Advanced vascular changes are evidence for high pressure, especially diastolic, while minor arteriolar disease indicates lower pressure. Direct view of the blood vessels, however, enables one to form an impression of the circulatory system which cannot be gained from blood pressure readings alone. The limitation of the disease to the smaller vessels, as is so often observed, allows one to give a better prognosis than when the entire vascular tree is affected. The slow development of retinitis is

decidedly less dangerous than the rapidly forming type, while profound edematous changes indicate an earlier termination than would be expected with lesser degrees of swelling. When the information gained from ophthalmoscopic examination is considered in conjunction with the knowledge derived from the general examination, a more complete evaluation of the stage of the disease, the prognosis, and treatment can be made. In this respect, the internist and ophthalmologist should correlate the results of their examinations so that each may contribute his information for a better understanding of the disease.

#### Discussion

**Dr. E. P. Weih, Clinton:** The retina is subject to the same vascular disorders and the same degenerative changes that occur in the brain. In retinal arteriosclerosis, we examine the smallest branches of the retinal artery. In the retina, as well as the brain, we are dealing with end arteries and we must examine them because of the absence of anastomosis and collateral circulation. Retinal details may be examined under relatively high magnification. Many of the finer details of circulation and pathology are beyond our reach in the living subject.

It is now recognized that the capillary network of the retina is less permeable in old age. Capillary insufficiency occurs in cases of vascular hypertension and is the cause of many defects of senility and especially of degeneration at the macula. When we find it impossible to demonstrate a normal visual acuity, we assume that there are some invisible circulatory and tissue changes, especially if the patient is senile. Definite changes frequently take the form of minute yellowish or whitish spots near the macula. These lie in the retina along very small blood vessels and are due to inadequate circulation of blood in the retinal capillaries, with a consequent deficiency of nutrition. Histologic investigation has shown that persons with these retinal lesions have a similar process in their brains, where from the same cause there arise small foci of softening. Such degenerative changes lead to changes in character, failure of memory, mild attacks of dizziness and difficulties in hearing.

The most severe forms of retinal vascular disease and retinitis can develop in the course of hypertensive disease in the absence of any marked or even definite evidence of renal impairment. When severe renal insufficiency occurs in association with retinitis in patients who have primary hypertension, it seems probable that the damage to the kidneys is not the essential feature of the disease, but that it is only part of widespread injury to the vascular system. Retinitis develops in some manner as a form of decompensation of the retinal circulation and not from organic lesions in the walls of the vessels. In most cases the size of the arterioles in the retina is an expression of vasomotor tone, and reduction in their size below that of the average normal indicates an



increase in their tonicity. Repeated observations in individual cases demonstrate that the size of the arterioles is not constant, but may fluctuate with variations in blood pressure.

The picture of localized groups of punctate, exudates and hemorrhages represents the end phase of venous obstruction or thrombosis, usually a feature of the cases of milder hypertension. It may also be seen in the terminal phases of angiospastic retinitis. When acute angiospastic retinitis occurs in the presence of a chronic sclerosis of the arterioles, the prognosis for the life of the patient is always more serious. If a person has acute angiospastic retinitis, with chronic sclerosis of the retinal arterioles, he always has diffuse arteriosclerosis, whether his primary disease is essential hypertension or chronic nephritis. The retinitis can be regarded only as a manifestation of a decompensation of the retinal circulation.

### TREATMENT OF OCULAR PHOBIAS\*

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Much of the suffering which brings human beings to the physician is not produced by organic abnormality. We are too prone to call such people neurotics, to tell them there is nothing the matter with them and let the problem go. This is not the proper attitude to take if we are to maintain in the minds of the public any advantage that we may have over the faith healer. We should spend a little thought occasionally preparing ourselves to treat effectively the fears and phobias of the sufferers who do not have organic difficulty but whose discomfort and pain are caused by fear of this or that. The phobia with which the ophthalmologist comes in contact is, of course, that of blindness, or fear of "hurting the eyes." We can divide this phobia into several parts, any or all of which may be manifested in a single patient. We have met most commonly five such fears: fear of close work, fear of light, fear of being without glasses, fear of having the wrong glasses and fear of inheritance.

Removing those fears from the patient's mind, making him less eye-conscious and therefore more comfortable, requires a discussion of his fears with him in language so simple that even the poorly educated may understand the groundlessness of their fears. If the explanation is simple enough and the illustrations sufficiently understandable, we find only a few persons who cannot be made comfortable, only a few who prefer to believe their grandmother, their neighbor, commercial advertising, and glasses salesmen than their own ability

to reason. For those few whose intelligence is so low that they do not even trust their own reasoning power, there would seem to be very little hope.

The treatment of ocular phobias must counteract some old adages which are as prevalent as measles: "Don't read too much, you'll ruin your eyes." "You mustn't read in such poor light, you'll injure your eyes." "You must have your glasses changed every two years." The treatment must also counteract a recent commercial advertising campaign which is attempting, unfortunately, to sell light by instilling fear in the customers' minds, rather than on the basis of their comfort. To the physician attempting to keep his patients comfortable, that seems a regrettable situation. With the hope that others may be able to make use of some of the discussion and illustrations which have helped us in removing these phobias, we shall present them.

Though the fear of light is not the most common, we shall consider it first; the fear of the man who drives a car at night, of the person who must work under bright artificial light or a dim artificial light and who is unfortunate enough to believe the advertising copy which suggests that insufficient light will cause injury to the eyes. It is not sufficient to tell the person who experiences pain when he is forced to look at a bright light that no harm is being done, because he will not believe it. You must tell him: "Hurts! Of course it hurts! You should be glad that a bright light causes pain. If it did not when you were a year old, your mother could not have been able to make you understand that you must not look at the sun, that if you did the maculae of your eyes would be burned by the heat rays from the sun just as you have set a piece of paper afire with a burning glass. So nature has provided you with a pain which keeps you from doing real damage to your eyes. Now, in the last few years, man has invented a lot of other bright lights which cause the same pain reflex, you call it discomfort, but we know that there is not enough heat coming from the automobile headlight or the screen in a picture show to do any burning. There are some lights that are too hot, the sun, a blast furnace, a glass blower's flame from which the eyes should be protected by a heat absorbing glass. But if you must drive a car at night or work before footlights, do it without fear, and disregard the discomfort which is only a normal reflex provided for your safety against looking at the sun."

Working in poor light simply means that a weak stimulus is given to the rods and cones of the retina, travels along the optic nerves, and reaches our consciousness. There can be no more injury to the retina or optic nerve produced by a weak light stimulus than there is caused to the ear or

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hearing nerve by listening to soft organ music. If dim light could possibly cause any harm, we certainly would never dare go to sleep and shut out all the light.

Then there is the person with normal eyes, or with a suitable pair of lenses, who still complains of pain when he reads, sews, corrects papers, looks through a microscope or uses the typewriter. We are assuming now that fusional amplitudes are adequate and that we are dealing with a functional problem. Say to him: "Have you ever studied physics? In physics you learned that when you look at a book, you don't see the book or the print on the book; what you actually see are the ends of rays of light coming from the book. The ends! mind you, and you know from common experience that you can't tell how long anything is when you look at the end of it! Well, then, the eye neither knows nor cares whether it's looking at the end of a short ray of light coming from a book or a piece of cloth, or a long ray of light coming from a tree a mile down the road. As a matter of fact, every ray of light that we look at but one is bent within the eyeball; is less than an inch long. What do we care how many times they are bent or where they come from on the outside?"

Seeing consists in aiming a camera at any object, the image of which falls on the retina and is then transmitted to the brain over a telephoto apparatus for interpretation. It is the interpretation by the brain which enables us to estimate the distance. We can tell that we are looking at a book because we hold it in our hand, and we have had some experience with it other than vision. Objects which have been seen only cannot be judged for size or distance; the moon, for example, can only be estimated as being farther away than the western hills behind which it sets. When we read, since we have two eyes, we must turn them in to the same word, and we must pull on the muscles which focus the rays which are diverging from the nearby object. Such muscle work carried on hour after hour will naturally tire the eye muscles just as the leg muscles will be tired after hours and hours of standing, but not injured.

The next fear is that of not wearing the magic glasses and of wearing the wrong glasses. These two fears are the same and the treatment is the same, so they may be combined in the discussion. Actually these fears are intermingled with the fear of close work. Office workers want glasses to *protect* their eyes. This idea has been sold to them by glasses salesmen and word of mouth advertising for so long that it amounts almost to a fetish. An office in a nearby city has a compliment of twenty-six young people between the ages of twenty-five and thirty-five, twenty-four of whom

are wearing glasses! The difficulty following the prescription of worthless half diopter spheres and cylinders for relief of symptoms of so-called asthenopia is not relieved in a vast majority of cases. Therefore, the wearer tries someone else who feels called upon to provide slightly different but equally worthless lenses, and he still obtains no relief because his actual trouble is fear and not ocular abnormality. Such a person goes through life with a pocketful of glasses and no confidence in anyone.

The treatment for such a "no-glass" or "wrong-glass" fear which we have found most effective is to make the statement "You must wear a certain glass," and then proceed to show the patient how ridiculous the statement is by saying, "If you are told that you must wear a certain glass, that is equivalent to saying that rays of light must enter the eye in that certain direction, since all any lens can do is change the direction of light rays. If one can say that rays of light must enter the eye in one specific direction and no other, it is equivalent to saying that you must never move your eyes, and that is absurd! It makes no difference to the eye whether you wear the right glass, or any glass at all. The only thing that matters is that you see well enough to suit you. You don't have to wear a glass because you do close work, or because you work under an artificial light, and you don't have to change your glass every two years because someone tells you to. Keep the health of your eyes checked just as you would the health of any other organ, but in the meantime don't worry about injuring them by what you look at, provided it isn't too hot."

The fear of blindness by the children and grandchildren of someone who went blind must be handled individually. It helps to be able to make some guess as to the cause of the familial blindness and to give as much reassurance as possible regarding the likelihood of inheritance. If the cause of blindness was not familial in character, the ophthalmologist should simply say that the individual's chances of having a similar condition are those of the general public, just like the chances of being struck by an automobile. It certainly is very noticeable that following the discovery of a serious eye condition in one member of a family, other members of the family will present their scratching lids, their blurs on reading, or their "the light bothers me" for reassurance.

If these people with their phobias are started off on the wrong foot by encouragement to worry about themselves either by malicious or thoughtless remarks of what they must and must not do, they will soon become unhappy eye neurotic individuals; if, on the other hand, some of these simple



facts are explained, their future life can be made very comfortable at least as far as their eyes are concerned.

### Discussion

**Dr. John E. Rock, Davenport:** The paper Dr. Dean has so interestingly presented to us is unusual in that it considers problems that are everyday affairs, but which are simply solved when one knows the answers. Satisfactory answers to these problems are often as vital to a patient's welfare as many other procedures which are more complicated. The consideration of this subject is of further value because we find little in texts and magazines on it. It brings to mind the occasionally mentioned possibility of establishing a chair of "Practical Experience" in our medical schools where the theory saturated student could learn from the "voice of experience," if you please, some of the practical methods of attack on the daily problems which confront every practitioner. Solution of some of these minor appearing problems early in a man's professional life is often a great aid in his establishment as a successful physician. Just as truly, the mishandling of them, minor though they may seem, can be of considerable detriment to the young man.

There is little to add to this paper, but I would like to call especial attention to the method some advertisers use in implied dangers to eyes by failing to use this light, that lense or whatever they have for sale.

Another fear people have that might be included here is the apparent dread of cycloplegics, and I believe this is largely traceable to those practitioners who are prohibited by law from using the drug. You have all heard the expression "Doctor ——— told me never to allow any one to use drops in my eyes to fit glasses." Others fear that if a cycloplegic is used they will always have to wear glasses. This is easily answered by telling them they can stop wearing their glasses if they wish to go back to the headaches and poor vision they had prior to the refraction. Others hesitate to start wearing glasses, fearing dependency on them. They can be answered the same way, and also by pointing out that if they need glasses now, sooner or later they will have to depend on them anyway.

Hardly in the phobia classification, but a regular occurrence, is the belief by many that if they get glasses now their trouble will be cured by their use and they can later eliminate the lenses. One must tell these people that glasses at best are only crutches.

In refracting myopic youngsters we can easily be responsible for a phobia by laying too much stress on the progressive myopia factor. It must be mentioned and proper advice should be given, but people should be warned, not frightened.

Newspapers which attempt to practice medicine through a column, or periodicals which write up spectacular discoveries and appliances before the test of time has been applied, may not create phobias,

but they do aid in developing a great deal of uneasiness in the general public.

Heredity plays a great part in the fears of these people, and no one will disagree that many eye conditions, especially cataracts, do appear in succeeding generations. The handling of these cases calls for considerable judgment, and is especially difficult when people come early for advice in attempting to forestall these processes of heredity. They really put us "on the spot" because their requests are the inevitable result of preachings and teachings of preventive medicine, and they often call on us to deliver when we are unable to do so.

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## EXSANGUINATION

### A Classification and Analysis of Thirty-three Cases

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Advances of great practical significance are now being made in the understanding and treatment of severe hemorrhage. New technic, revolutionary in nature, now enables us to treat serious bleeding with more chance of success than ever before.

Levinson, Neuwelt and Necheles<sup>1</sup> have recently reiterated the value of colloid over crystalloid solutions in the treatment of secondary shock and have demonstrated the practicability of using pooled human serum for this purpose. These authors state that the iso-agglutinins are neutralized when human serum is pooled. This makes it possible to use pooled serum immediately without the delay of typing, and enables the physicians in the smaller hospitals to treat cases of shock and hemorrhage as effectively and quickly as the larger hospitals with their blood banks. Indeed, it has been only recently that blood banks have been at all practical for anyone.<sup>2</sup> Now they are an established part of the larger institutions. Dam<sup>4</sup> and others gave us a new concept concerning the relation of prothrombin deficiency to the hemorrhagic tendency in obstructive jaundice and have worked out a means of overcoming this deficiency through the use of Vitamin K and bile salts.

Many workers are studying hemorrhage from their diverse, special points of view, neglecting to inquire into the causes of the emergency phenomena which they are so admirably equipping themselves to treat. In the literature as far back as 1921 no one has made an attempt to study and classify cases of exsanguination from a clinical viewpoint. I wish to present thirty-three such cases with postmortem examinations and to correlate them with the recent advances in treatment made in this field.

The material for this study was culled from

about one thousand postmortem examinations performed by Arthur H. Wells, M.D., at St. Luke's Hospital, Duluth, Minnesota. Thirty-two were designated as death from exsanguination. I have included one obvious fatal hemorrhage diagnosed as such by the attending surgeon without necropsy. Table I is a simple classification of these deaths based on etiology of the hemorrhage. The classification is incomplete, since no deaths occurred as a result of hemorrhage from incomplete abortion, ruptured ectopic pregnancy, resected prostate gland, hemophilia, purpura, scurvy or placenta praevia.

TABLE I

Traumatic .....	10
Malignancy .....	4
Postoperative .....	3
Non-syphilitic rupture of the vessels.....	3
Postoperative jaundice.....	2
Obstetric shock.....	2
Blood dyscrasias.....	2
Gastric ulcer.....	2
Syphilitic aortitis.....	2
Ruptured esophageal varix.....	1
Tuberculosis .....	1
Suicide .....	1
Total .....	33

The rational treatment for bleeding naturally has two main components; namely, the control of the bleeding and the restoration of the depleted circulating fluid volume. No matter how well the source of the bleeding is controlled, if the fluids given the patient leak out into the tissues instead of remaining in the circulation, the patient tends to remain in shock. Even if the circulating volume is restored by fluids which remain in the circulation, they will not save the life of a patient whose source of bleeding is uncontrollable.

Auto accidents head the list as the chief cause of fatal bleeding. Four patients ruptured large vessels within the body cavity, one patient lacerated her left lung, while the last ruptured his spleen and left kidney. All of these died before they reached the hospital. Many times, however, one can save the life of a patient whose spleen is ruptured. One usually finds tenderness and increased density in the left upper quadrant of the abdomen with elevation of the left diaphragm.<sup>6</sup> The patient will frequently complain of pain in his left shoulder. These findings, along with shifting dullness in the flanks and signs of shock, will make the diagnosis. The treatment of immediate splenectomy lowers the mortality rate of ruptured spleen from 95 to 45 or 50 per cent.

If the liver is lacerated, tenderness in the right upper quadrant is noted, with shifting dullness in the flanks, a mass in the cul-de-sac, an increasing leukocytosis and signs of shock.<sup>7</sup> The friable liver tissue is difficult to suture, and tamponade may be the only recourse, although the danger of infection by the use of the latter is greater. Early transfusion, of course, is indicated. Laceration of the

liver in the newborn with the formation and subsequent rupture of a subcapsular hematoma has been discussed in a recent article by Clear.<sup>8</sup> In Case 14 of our group, the baby was entirely well for about sixty hours after delivery. Suddenly it became dyspneic, cyanotic and practically pulseless, dying within three hours. The baby was symptomless until the capsule gave way.

One of our series bled to death from a rifle wound which severed his femoral artery and vein. Perhaps if a quick-thinking individual had been on the scene to apply a tourniquet above the lesion until help arrived this life could have been saved. In any case of serious traumatic injury, much valuable time might be saved by telephoning the hospital to start preparing for the admittance of a hemorrhaging patient before the latter has left the scene of the accident.

In general, persons with advanced carcinoma bleed out because there is no good way of getting at the source of bleeding to stop it. Usually general measures aimed at restoring fluids are futile gestures and often cruel, in that they prolong the agony of these people a few miserable days or weeks. Sometimes serious hemorrhage can be avoided by carefully planned technic in the irradiation therapy of the malignancy. One of our cases of carcinoma of the cervix illustrates this point.

A white female, forty-five years of age, entered the hospital complaining of continuous vaginal bleeding and backache for the past three and one-half months. The pelvic examination revealed a bleeding, ulcerated, firm, nodular cervix with slight induration of the left parametrial tissues. A diagnosis was made of carcinoma of the cervix with extension into the left parametrium. Fifty milligrams of radium were inserted into the cervix for seventy-two hours. She was discharged and in the next three months she had two courses of deep x-ray therapy. At the end of this time, she came in for check-up, and examination revealed a mass in the left parametrial tissues larger than before. Another fifty milligrams of radium were left in the cervix for seventy-two hours. After one month at home, she returned because of a severe hemorrhage of one day's duration. The uterus was packed and the bleeding stopped. She had no further irradiation therapy and no more bleeding for three months. Then she returned, having such a severe hemorrhage that hysterectomy was performed with ligation of the uterine arteries. Three months after this operation she started to bleed again. This time she died. The time from onset to death was just over one year. Postmortem examination showed a superficial necrosis of the upper one-third of the vagina with much



clotted blood in this region. We know that radium tends to destroy tissue. Perhaps if deep x-ray therapy were given first, with local measures used meanwhile to clear up the cervical infection before radium was inserted, and if the second dose of radium were not given, the distressing slough with its attending hemorrhage might be avoided.

There are three deaths as the result of exsanguination occurring postoperatively. The first makes a valuable study since the pathologic entity in itself, ruptured corpus luteum cyst, sometimes causes fatal intraperitoneal exsanguination. The severity of the bleeding in this condition depends on the blood supply in the area of the rupture.

Case 1. A previously healthy white female, seventeen years of age, complained on admittance to the hospital of the sudden onset of acute right lower quadrant pain at 4:00 a. m. of the same day. She was nauseated after the onset of pain, but did not vomit and passed several loose stools. The pain did not radiate, was steady, aching in character and persisted until after admittance. Physical examination showed temperature to be 99.6 degrees, pulse 120 and respirations 18. The abdomen was diffusely tender with more localized tenderness and muscle spasm in the right lower quadrant. The right adnexal region was tender on pelvic examination and moving the cervix caused extreme pain in the right lower quadrant. Laboratory findings were: urine, negative; hemoglobin, 70 per cent; and white blood count, 12,000, with an increase in polymorphonuclear cells. The preoperative diagnosis was acute appendicitis.

At operation at 5:00 p. m. on the day of admittance, a ruptured corpus luteum cyst with approximately 500 cubic centimeters of bright red blood in the peritoneal cavity was found. Oophorectomy was done on the right side; all bleeding was controlled and the appendix was removed. The patient left the operating room in good condition. At 8:00 p. m. she was given 1,000 cubic centimeters of five per cent glucose in normal saline solution, and a similar injection was given at 10:00 p. m. She went into shock at this time. The blood pressure dropped to 80/60, and remained there for three hours; 500 cubic centimeters of acacia were given intravenously after which the blood pressure rose to 110/60.

On the first postoperative day the patient was given 2,000 cubic centimeters of five per cent glucose in normal saline solution at 11:00 a. m., and at 5:00 p. m. she received 1,000 cubic centimeters of five per cent glucose in normal saline solution. Her hemoglobin was 33 per cent, the blood pressure remained at 100/50, and the pulse was 130 to 140. She took fluids well by mouth, but they were not charted. On the second postoperative

day the patient was given 1,000 cubic centimeters of five per cent glucose in normal saline solution at 10:00 a. m., and 500 cubic centimeters of citrated blood at noon. The blood pressure and pulse remained the same. By 6:00 p. m. breathing was becoming difficult and there was severe left thoracic pain. Cough with blood-tinged sputum was present. Oxygen was started and papaverine was given. Respirations became increasingly irregular and the patient died.

The postmortem examination revealed 1,000 cubic centimeters of red blood and clots in the abdominal cavity. The heart was normal, but the lungs showed a grade 4 edema of all lobes. The retroperitoneal tissues, mesentery and abdominal wall were severely edematous. No open vessel was found.

In retrospect it seems reasonable to conclude that most of the bleeding in this patient occurred in the four hours immediately after operation. The next morning, you will recall, her hemoglobin was 33 per cent. The patient was near or in shock for about fifty-six hours. Crystalloid fluids certainly had their chance in this case, but we know from our postmortem findings that the fluids did not stay in the circulation, but filled up the alveolar spaces of the lungs and ran into subcutaneous tissue. We are rather certain that the point of bleeding here was small, and that bleeding must have been minimal after the original severe hemorrhage just subsequent to operation. Whole blood or serum in adequate amounts from the beginning probably would have saved her life.

Case 2. A white female, sixty years of age, gave a history of periodic attacks of right upper quadrant abdominal pain radiating to her scapula with intolerance to fatty foods for the past ten years. The last attack of pain started a week before admittance. Pain and vomiting with her last attack were more severe than in former attacks. Examination revealed a somewhat obese white female with normal temperature, pulse and blood pressure. There was some tenderness in the right upper quadrant of the abdomen and in the epigastrium. No x-rays were taken. The diagnosis was cholecystitis and cholelithiasis.

Cholecystectomy was performed; no stones but some adhesions around the gallbladder were found. In exploring the abdomen a retroperitoneal tumor mass the size of a grapefruit was discovered. In its enucleation a great amount of bleeding was encountered. Bleeding was finally controlled and gauze packs were used to compress the sacral promontory from which some oozing still persisted. The patient was given 1,000 cubic centimeters of five per cent glucose in normal saline solution immediately after the operation, and a

Patient	Age	Group	Clinical diagnosis before hemorrhage	Duration of illness	Time from beginning of fatal hemorrhage	Prescription for condition causing hemorrhage	Emergency prescription for hemorrhage	Autopsy diagnosis	Estimated blood loss
1. F	45	Malignancy	Cancer of cervix	1 year	2 days	Radium, x-ray, hysterectomy for bleeding control	Morphine sulphate, $\frac{1}{4}$ grain, as required	Primary cancer of cervix; exsanguination	?
2. F	52	Malignancy	Cancer of cervix	1 year	11 hours	X-ray, radium (after eight months)	Morphine sulphate, $\frac{1}{4}$ grain	Primary cancer of cervix; exsanguination	
3. M	73	Malignancy	Gastric ulcer with obstruction	1 year	2 days	Milk and cream off and on for four months	5,500 c.c. of sodium chloride; 500 c.c. of blood	Ulcerated gastric cancer, eroded vessel; exsanguination	2,000 c.c.
4. M	50	Malignancy	Cancer of larynx	9 months	15 minutes	Tracheotomy	10 c.c. of thromboplastin	Cancer of larynx; rupture of left superior laryngeal artery	2,500 c.c.
5. F	20	Traumatic			10 to 15 minutes		None	Rupture of dorsal aorta; exsanguination into left pleural cavity	2,000 c.c.
6. F	50	Traumatic			10 to 15 minutes		None	Rupture of inferior vena cava; exsanguination	1,600 c.c.
7. M	58	Traumatic			?		None	Rupture of left kidney and spleen; exsanguination	1,600 c.c.
8. M	40	Traumatic			?		None	Rupture and attachment of inferior vena cava to right auricle; exsanguination	3,000 c.c.
9. M	65	Traumatic			?		None	Ruptured aorta; exsanguination into left pleural cavity	2,500 c.c.
10. F	26	Traumatic			6 hours		None	Laceration right lung; hemothorax; exsanguination	1,200 c.c.
11. M	55	Traumatic			?		None	Laceration liver; intraperitoneal exsanguination	1,000 c.c.
12. M	57	Traumatic			10 to 20 minutes		None	Rupture of liver, pancreas and right gastric artery; exsanguination	2,000 c.c.
13. M	45	Traumatic			13 minutes		None	Gunshot wound, severance of right femoral artery and vein	?
14. M	3 days	Traumatic			3 hours		Carbon dioxide, oxygen and coramine	Ruptured liver; intraperitoneal exsanguination	400 c.c.
15. F	60	Postoperative	Chronic cholecystitis; retroperitoneal tumor	2 weeks	3 hours	Surgical removal of tumor	1,000 c.c. 5% glucose; 1,000 c.c. 10% glucose; 6 c.c. coramine; 11 c.c. eschschin	No autopsy	1,000 to 1,500 c.c.
16. F	17	Postoperative	Acute appendicitis	1 day	60 hours	Removal of ruptured corpus luteum cyst.	6,000 c.c. glucose; 500 c.c. acacia; 500 c.c. blood	Operated corpus luteum cyst; intraperitoneal hemorrhage	1,500 c.c.
17. M	30	Postoperative	Gastric ulcer with hemorrhage	10 years	7 hours	Ulcer diet; gastric resection; subsequent ligation of vessel at bedside	450 c.c. blood; 250 c.c. glucose; 10% in saline	Necrosis through stump of gastric artery with hemorrhage	Over 1,000 c.c.
18. F	58	Postoperative jaundice	Jaundice; common duct obstruction; diabetes	3 weeks	8 hours	Dietetic control; cholecystectomy; cholecystotomy; appendectomy	1,000 c.c. saline; 500 c.c. 10% glucose; 500 c.c. blood	Jaundice; intraperitoneal hemorrhage; recent operation for cancer of pancreas	1,700 c.c.
19. F	48	Postoperative	Jaundice; common duct obstruction	5 years	4 hours	Cholecystotomy	Nasal oxygen; external heat; caffeine	Jaundice; common duct obstruction with stone; hemorrhage	2,200 c.c.
20. F	21	Obstetric	54 hour labor; difficult posterior delivery		6 hours	Kieland rotation; forceps extraction	1,000 c.c. 10% glucose; coramine and adrenalin	Bronchopneumonia; hemorrhage and shock	600 c.c.
21. F	40	Obstetric	35 hour labor; difficult occiput posterior delivery		12 hours	Manual rotation; forceps delivery; later uterus packed	Nasal O <sub>2</sub> ; pituitrin and ergot; 3,000 c.c. 5% glucose	Postpartum shock; exsanguination	800 c.c.
22. M	7	Blood dyscrasia	Lymphosarcoma with leukemia	3 months	?	X-ray to long bones	None	Lymphosarcoma; destruction of hematopoietic elements by x-ray hemorrhagic phenomena with exsanguination	?



23. M	Still-born	Blood dyscrasia	?							Hemorrhagic disease of newborn; hemorrhage into lungs, liver, etc.	?
24. M	62	Gastro-intestinal	Gastric ulcer	4 years	2 days	Ulcer diet; operated one month before death for perforation	1,000 c.c. 10% glucose in sodium chloride; 600 c.c. blood; coramine			Gastric ulcer with hemorrhage and exsanguination	?
25. M	80	Gastro-intestinal	Hypertensive cardiac disease	No ulcer symptoms	3 hours	Nasal O <sub>2</sub> ; sedation	None			Gastric ulcer with hemorrhage; exsanguination	1,200 c.c.
26. M	10	Gastro-intestinal	History of hematemesis	7 hours	8 hours	None	1,000 c.c. glucose; 500 c.c. acacia; 25 c.c. blood			Portal liver cirrhosis; ruptured esophageal varices	1,500 c.c.
27. M	70	Syphilis				Not known	None			Syphilitic aneurysm with rupture into mediastinum; exsanguination	2,000 c.c.
28. M	45	Syphilis				Not known	None			Rupture of syphilitic aneurysm into trachea with exsanguination	?
29. M	61	Non-syphilitic vessel rupture	Unexplained intra-abdominal bleeding		1 hour	None	None			Ruptured aneurysm of left common iliac artery; retroperitoneal exsanguination	2,000 c.c.
30. F	50	Non-syphilitic vessel rupture								Rupture of dissecting aneurysm of dorsal aorta; exsanguination left pleural cavity	2,500 c.c.
31. M	75	Non-syphilitic vessel rupture	Arteriosclerosis; left thoracic pain		20 hours		None			Arteriosclerotic abdominal aneurysm with rupture; retroperitoneal exsanguination	1,500 c.c.
32. M	44	Tuberculosis	Pulmonary tuberculosis	21 months	30 minutes	Complete rest	Icebag to chest			Moderately advanced ulcerated tuberculous with hemorrhage; exsanguination	Over 500 c.c.
33. M	38	Suicide	Pulmonary tuberculosis		Not known	Complete rest for tuberculosis	None			Exsanguination resulting from severance of left radial artery.	?

similar dose of ten per cent glucose later. During the next two hours she also received six cubic centimeters of coramine and eleven cubic centimeters of eschatin.

The patient lived four hours postoperatively. If colloids in the form of pooled human serum had been immediately available in sufficient quantities in this case, there would have been an excellent chance of saving this patient's life, since shock is controlled by the serum of the blood, not by the cells.<sup>1</sup>

The third postoperative death occurred in a man thirty years of age who had recently had a partial gastric resection for an old gastric ulcer. Necrosis, perhaps resulting from seepage of digestive juices through the carefully buried stump of the right gastric artery, resulted in repeated serious hemorrhages through his operative wound, and death occurred on the twenty-second day.

Two jaundiced patients, both having stones obstructing their common ducts, died from intra-abdominal exsanguination after cholecystectomy. We now know that the bleeding tendency in jaundice develops when the prothrombin level of the blood drops down to 40 per cent of normal or below and that in jaundice cases this level regularly drops 20 to 30 per cent postoperatively.<sup>2</sup> Three thousand to six thousand units of Vitamin K combined with 30 grains of bile salts each day, mixed with saline solution and fed through a duodenal tube preoperatively until the prothrombin level is normal, will enable the surgeon to operate with comparative safety. Postoperatively the vitamin therapy should be continued. Smith, et al<sup>3</sup> have devised a simple bedside test for prothrombin level which can be performed even by one unskilled in laboratory procedures so that now even the country practitioner has no excuse for not following his jaundiced patients with repeated prothrombin determinations.

Both of our maternal deaths from exsanguination occurred in cases of difficult labor with the fetus in the occipitoposterior position. One mother lived six hours, the other lived twelve hours after delivery. In both cases the blood loss was not exceptionally great and in each case the bleeding was well controlled before death. One patient received 1,000 cubic centimeters of five per cent glucose, then 1,000 cubic centimeters of ten per cent glucose intravenously along with coramine and adrenalin. The other patient was treated with nasal oxygen and 3,000 cubic centimeters of five per cent glucose. Matthews,<sup>11</sup> in an excellent review of obstetric shock, says that hemorrhage does not, *per se*, induce shock in these patients, but the combination of hemorrhage and trauma may produce shock when neither hemorrhage alone nor

trauma alone would have this effect. His treatment follows the concept of Moon<sup>12</sup> that shock is a circulatory deficiency, neither cardiac nor vasomotor in origin, characterized by decreased blood volume, decreased cardiac output and increased concentration of blood. He therefore dispenses with drugs directed toward stimulating cardiac activity or vasomotor tone as well as with isotonic crystalloid solutions. He uses external heat and 100 to 200 cubic centimeters of 50 per cent dextrose intravenously to tide the patient over until blood can be obtained for transfusion.

Exsanguination from gastric ulcer accounted for two deaths in our series. Both were elderly men and one of them was operated upon one month before death because of perforation. These two facts support the contention of Winters and Egan<sup>13</sup> that arteriosclerosis is a large factor in the severity of bleeding from peptic ulcer, and that ulcers which perforate also sometimes bleed seriously. One in our group had never had any ulcer symptoms so that the diagnosis of ulcer as well as that of internal hemorrhage was not entertained.

When and when not to operate on patients with bleeding peptic ulcers is a dilemma requiring a great amount of carefully weighed judgment in each particular case. I believe most people feel that repeated severe bleeding is an indication for operation after the third hemorrhage. If a patient gives a history of one or two previous episodes of hemorrhage and comes in bleeding again, massive transfusions and operation within twenty-four hours after the bleeding starts are advisable. If the patient has been bleeding longer than this the mortality rate from operation is much higher than that of supportive therapy.

Rupture of esophageal varices also presents a rather hopeless situation as far as actually stopping the point of bleeding is concerned. Again we must be content with general supportive measures.

The two syphilitic aneurysms and three arteriosclerotic aneurysms that ruptured make fascinating pathologic descriptions and short, puzzling diagnostic problems clinically, but they are beyond the help of our therapeutic measures.

Pulmonary hemorrhage in tuberculosis is treated differently in each sanatorium. It seems poor treatment to inhibit the cough reflex in these persons with morphine, and allow the blood from an apical cavity to spill over into the opposite lower lung with subsequent secondary spread of the tuberculosis. Logical therapy consists of quiet, a comfortable position, ice to the chest and slow transfusion if necessary. If the hemorrhage stops, the physician has done nothing to further the spread of the infection.

Our last case was one of suicide. The patient, having far advanced tuberculosis, was found dead in bed after he had cut his left radial artery. In institutions with larger numbers of tuberculous patients, all sharp objects are taken from the rooms because of the frequency of this method of suicide. With further advances in psychiatry perhaps many in the group this patient represents may be spared.

Now that we have considered each group separately in this series, I wish to make a brief statistical study of the seven patients in this group who were the most intensively treated at the time of the hemorrhage. This group includes Patients 15, 16, 17, 18, 19, 20 and 21. They lived an average of fourteen hours after they began to hemorrhage and lost an average of 1,250 cubic centimeters of blood. They received an average of 2,100 cubic centimeters of crystalloid fluid (five per cent glucose in normal saline solution mostly) and an average of only 200 cubic centimeters of blood. Adequate treatment has not been carried out until at least 80 per cent of the blood loss is replaced either by whole blood or blood serum. Crystalloid solutions are no substitute. They will not bring a patient out of shock and keep him out. When the contention of Levinson that untyped pooled human serum is innocuous has become an established fact, every hospital will have this material on hand at all times for emergency use, and these cases of hemorrhage can be treated promptly and much more effectively than they have been in the past.

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## SUBACUTE BACTERIAL ENDOCARDITIS\*

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Subacute bacterial endocarditis<sup>1</sup> is an inflammation of the lining of the heart, but pathologically refers more especially to the heart valves. The disease in most instances is an infection grafted on an already damaged heart valve, or a lesion which is congenital in origin. In the first instance the injury may have occurred due to a previous low grade infection or repeated injuries, as in recurrent attacks of rheumatic fever. In fact some authorities are agreed that primary infections with this disease are the exception. Chorea has a prominent place as a result of its association with frequent simple endocarditis.

Historically<sup>2</sup>, the vegetations on the valves and walls of the heart were first described by Corvisart and Leroux in 1801. In 1810 Wells described similar lesions. The first accurate clinical description of the disease was made by Kirkes in 1852. During the past thirty-five years there have been many valuable contributions in the study of this disease; Koeniger, Loehlein and Gaskell contributed their pathologic studies, Shottmuller, Rosenow and Horder, their bacteriologic studies, and very excellent clinical contributions were made by Osler, Billings, Jochmann, Kastner and many others.

There have been many classifications of the disease, but the simplest and most practical to me is the one of Kinsella:

1. Non-bacterial
  - a. Acute non-rheumatic
  - b. Acute rheumatic
2. Bacterial (mycotic)
  - a. Acute
  - b. Subacute

The latter group under the bacterial type is the one with which we are concerned in this paper. Most authorities are agreed that any case persisting over a period of two months should be classified as subacute. Subacute bacterial endocarditis occurs most frequently in the second, third, fourth and fifth decades of life. More and more cases are being recognized each year. Any hospital of 200 beds in a temperate climate should yield several cases every year, and it will be especially noticeable in those areas where rheumatic fever is common. There seems to be a slight racial immunity in that the disease seldom occurs among negroes or the American Indian. A high percentage of victims are among those who have previously damaged heart valves and are subject

to dental, tonsillar or sinus infections. It occurs more frequently in females than in males.

The pathology<sup>3</sup> of this disease can be divided for convenience, because of its local inception and later systemic manifestations. The infection is usually grafted on a scarred valve resulting from former disease or on a congenital deformity. There is destruction of the endothelial covering of the valve plus fibrin deposit in which there are few cellular elements. Bacteria in the circulation may become entangled in the fibrinous mesh following which they continue to grow luxuriantly, since fibrin makes an ideal culture medium for the *Streptococcus viridans* which is the offender in 95 per cent of the cases. There is an irritation of the valve beneath this fibrin deposit with slight deformity. This condition may spread from the valve to the adjacent heart walls or, in the case of the pulmonary and aortic valves, to the adjacent blood vessel wall. The fragile nature of these vegetations allows infective particles to break off because of the trauma to which the valves are subjected under conditions necessary for the performance of their function. This brings us to the associated pathology, or general systemic manifestations which come as a result of the above fragments, which floating in the systemic circulation, are deposited in extracardiac tissues causing infarction or embolic manifestations. As a result of the latter occurrence we find systemic evidence of the disease in the cardiovascular system, nervous system, skin, mucous membranes, kidneys, spleen and liver. With the vegetations only in the right heart the ordinary manifestations may be masked since the emboli are filtered out in the capillary beds of the lungs. Willius feels they may never occur peripherally.

The bacteriology<sup>4</sup> of subacute endocarditis mainly confines us to one organism, the *Streptococcus viridans*, so named because it produces a greenish zone around the colony in blood agar media. According to Zinsser this organism grows well in the bottom of liquid media, in deep agar stabs and in fibrin. The altered hydrogen ion concentration in the media may change the chromogenic characteristics of certain strains of these organisms so that they become hemolytic or vice versa. Hence in all experimental work the hydrogen ion concentration of the media must be kept constant.

The mode of infection has attracted the attention of students of this disease. Senesrod, Koch and Kiedrich, along with many others, have emphasized the rôle of the reticulo-endothelial cells in this mechanism due to their ability to engulf organisms to which they are specifically or non-

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specifically sensitized, either by the organisms themselves or the toxins they produce. It only remains for these cells covering a damaged heart valve to pick up circulating organisms from the blood stream with consequent irritation, denudation of cells, deposition of fibrin in which bacteria may become entangled, and the stage is set for the disease under discussion.

Friedman, Katz and Howell<sup>5</sup> made a study of the comparative resistance of the heart valve tissue and the extracardiac tissue which is a beautiful and ingenious piece of work. They attempted in this experiment to find a reason for the disappearance of the organisms in extracardiac tissue and their persistence in the vegetations on the valves. They took cultures of the organisms isolated from an active case and inoculated sterile fibrin, broth cultures and normal salt solution. The salt solution and broth cultures died out in two to four days, but the bacteria remained alive in the fibrin for a period of forty days. In other words, pure fibrin was an ideal culture medium. These workers then placed organisms from the same source in immune serum, agitating this medium for an hour with the organisms still persisting. A suspension of red corpuscles in serum was used in the same manner with the same results. A third experiment in which the organisms were mixed with a suspension of polymorphonuclear leukocytes was carried out in the same manner and it was found that no organisms could be grown from this mixture. In other words, the presence of the leukocytes, a collection of which always attends the localization of an extracardiac embolus, was the key to the difference in resistance of valvular and extracardiac tissue to the infection. On the heart valves there are very few leukocytes in the vegetative growth and underlying tissue. Physiologic trauma, old injury to the valves, ideal culture medium and low cellular invasion of the fibrin make conditions ideal for the growth of the *Streptococcus viridans*.

Having performed these experiments *in vitro* they decided to attempt the same *in vivo*, using dogs for these experiments. They constructed bakelite capsules seven by three millimeters, open at one end with many perforations along the sides to permit contact of the contents with the blood stream. A blood agar culture of the organisms was placed within the capsule to which a string had been attached at the opposite end. This capsule was placed in a trocar and the trocar introduced into the heart chamber; the other end of the string was sutured under the skin. Blood cultures were taken from the dog and in those cases where the capsules floated free in the blood stream the cultures returned positive. In instances where

the capsules became attached to the heart walls the cultures became negative after a period of nine days. Many of those in which the blood cultures continued positive were found at autopsy to have been covered with a coating of fibrin on the outside. In other words, they were protected from the leukocytes in the circulating blood by the new deposit of fibrin. In those capsules which became attached to the cardiac wall there was an invasion of the capsule by leukocytes and destruction of the organism. This latter occurred in the cases in which the blood cultures became negative. The value of this experiment lies in the fact that the test *in vitro* supported the findings *in vivo* and vice versa. It also helps to explain the fact that drugs in the circulation can accomplish little because of the protection offered the bacteria buried in fibrin on the heart valves. However, this has opened up a new problem in the possibility of effective treatment which will be mentioned briefly under treatment.

The symptoms of this disease may be many and varied because of the insidious onset, late cardiac manifestations and presence or absence of embolic phenomena. The general symptoms are those of any long-continued low-grade infection, coming on insidiously or following the departure of some previous infectious disease, most commonly rheumatic, upper respiratory, dental or perinasal sinus infections. If it follows some infection immediately the symptoms may be attributed to a persistence of, or a slow recovery from the preceding disease. There may be simply a loss of pep, poor appetite and increased nervousness and irritability. The only cardiac manifestation may be that of palpitation or shortness of breath on exertion. There may be a low-grade fever, sweats and mild chilly sensations. However, the cardiac symptoms may be masked until late in the disease. There may be pains in the extremities, knees, ankle joints and calves of the legs, which on examination objectively show nothing. After a period of weeks or months of the above symptoms the patient may develop chills of moderate severity followed by fever, sweats and marked weakness. At this time he may complain of tenderness of fingers and toes, pains in the left upper quadrant, alternating periods of diarrhea and constipation, and he may become despondent. Physical examination reveals a marked pallor, rapid soft pulse, pallor of the conjunctiva and mucous membranes and throbbing of the neck vessels. There are usually some moist râles at the base of the lungs. The heart may show a change in the already present murmur or the advent of a new one. On examination of the abdomen there may be tenderness over the spleen and kidneys, and if the dis-



ease is in a late stage, some enlargement of the liver and petechial spots may be noted in the skin, mucous membranes, eyes or retina, or splinter hemorrhages under the nail. There may or may not be clubbing of the fingers. There is usually tremor of the hands, and there may or may not be evidence of other brain lesions such as loss of the sight of an eye or hemiplegia. In the early stages of the disease the blood usually shows a moderate secondary anemia which increases with progression. The leukocytes may vary from 17,000 to normal. The sedimentation rate is usually increased. Clotting time, bleeding time and platelet count may be within normal limits. The urine may show gross or microscopic blood depending on the amount of damage to kidneys from emboli or infarction. In those cases of low-grade infection or in those which have persisted for some time, renal insufficiency and an elevated blood chemistry may cloud the original picture. If the infection originates in the right heart Willius<sup>6</sup> states that all the symptoms may be confined to those of pulmonary origin with a diagnosis of unresolved bronchopneumonia until the terminal stage of the disease is reached, or discovery of the true condition is ascertained by blood culture. This is also true in congenital lesions according to Blumgart<sup>7</sup>, where persistent septal defects between the right and left heart and the higher pressure in the left heart confines the infection to the lesser circulation of lower pressure. In these cases also blood cultures may be negative until late or until mycotic infections break through into the general circulation. Many of the latter cases are not properly diagnosed until autopsy reveals the true situation. The above symptoms and signs are only an enumeration of the more common features of the disease. During the later days of the illness many patients become hard to manage due to weakness and cerebral phenomena. The discovery of petechial eruptions, clubbing of the fingers, splenic enlargement, positive blood cultures with the advent of or change in already existing heart murmurs will aid greatly in making a diagnosis. In the absence of positive blood cultures and the embolic phenomena, typhoid, tuberculosis, undulant fever, low-grade septicemia and Rocky Mountain spotted fever must be ruled out. Definite cardiac symptoms may not be prominent and decompensation occurs very late.

The first requisite under treatment is prophylaxis where this is possible. Individuals with cardiac lesions should remove all possible foci of infection such as the tonsils, teeth and perinasal sinuses, and avoid disturbing these except under ideal conditions because the *Streptococcus viridans* is almost constantly found in such foci. Palmer

and Kempf<sup>8</sup> reported 17 per cent of a group of 82 patients who had not more than two teeth extracted and developed transient bacteremia; in 13.4 per cent of the cases the organism was *Streptococcus viridans*. The mere traumatization of infected gums may cause the organism to enter the circulation. These patients should be in the best condition possible before extraction of teeth or eradication of foci is attempted. It has been suggested that patients receive chemotherapy before and during the eradication of foci to protect them against invasion of the heart valves by the infective agent. However, Biehn<sup>9</sup> states we have no proof that the sulfanilamide derivatives are sufficient for this since their use is only applicable to the hemolytic strains of streptococcus which are not the usual offenders in subacute bacterial endocarditis.

The general care of these patients after the disease has been discovered is that of any cardiac condition: rest in bed, careful nursing, a nutritious, easily digested diet, proper elimination, and plenty of fluids. Where anemia is severe, transfusions are a help to the patient's feeling of well-being. However, typing of the patient must be done before chemotherapy is instituted if it is to be used. In drug therapy of this disease, the medical profession cannot be accused of nihilism; everything from arsenicals to and including aniline dyes have been tried. Immunotransfusions, serums and vaccines have also been used, but with the same result. Spink and Crago<sup>10</sup> of the University of Minnesota treated twelve patients, eleven of whom died. The twelfth has survived nine months without evidence of disease, but they are not sure whether this is a remission or a cure. Kelson claims that sulfanilamide, prontasil and sulfapyridine will sterilize the blood and lower the temperature only temporarily. Only one in a series of 65 cases recovered and this patient had gonococcus and a non-hemolytic, anaerobic, streptococcus infection. Middleton and Burke<sup>12</sup> report 88 cases of *Streptococcus viridans* endocarditis with 87 deaths and one recovery. All therapy in the 87 was without result.

Because of the inclusion of the organism in the fibrinous deposits on the heart valve and the inability to penetrate that covering with chemotherapeutic methods, Kelson conceived the idea of using heparin to prevent the formation of fibrin on the heart valves and thus make the organism vulnerable to attack. To do this the contents of a ten cubic centimeter vial of heparin were added to 500 cubic centimeters of saline solution and this was given over a period of fourteen days, day and night by the intravenous drip method. This increased the clotting time of ven-

ous blood (normally below twenty minutes) to approximately one hour. Sulfapyridine was started four to seven days previous to the beginning of the intravenous treatment and continued throughout. Vitamin C was given for fibrous repair, 200 milligrams of liver extract a day was given for three or four days, and then 100 milligrams at the same interval. Four out of seven patients died; the others remained bacteria free. The danger of hemorrhages at the site of the emboli are considerable; but with a high mortality rate they think this risk is justified. The treatment is still in the experimental stage and requires rigid hospitalization and early diagnosis. It should be begun early to avoid hemorrhages due to mycotic infections. Fever therapy according to Dry and Willis,<sup>13</sup> offers no hope. Atropine may be used to prevent sweats which may be weakening and alarming to the patient. Iron and arsenic may be given, but are of little use

#### CASE REPORT

Mr. W. M., thirty-eight years of age, a pharmacist, came in on June 25, 1939, complaining of fainting spells off and on for four years, cramps in the legs and chest and general weakness for seven months and loss of weight for five months.

The patient admitted frequent attacks of tonsillitis, but none in recent years. In 1930 he was rejected for life insurance because of a definite double aortic murmur, although he did not have any heart symptoms at that time. In 1935 he began having attacks of palpitation of the heart which would last several hours interspersed with attacks lasting only a few minutes. He had frequent fainting spells, especially on getting out of bed suddenly. The above symptoms continued off and on, becoming more frequent and of longer duration until March 1939, when he had what he called an attack of influenza. He experienced at that time sore throat, headache, fever and general aching. Because the manager and several employees were sick at the same time, he continued at work. After a week or so his fever subsided but he did not seem to recover. His pulse remained fast, he had frequent attacks of tachycardia and he still felt weak. He continued to work, however, and one day while driving a car he was taken with a sudden severe pain in the calf of the leg, but stated it was not like a cramp in that the muscle did not draw up and stepping on the leg did not increase the pain. This pain was so severe it required opiates for relief and he even tried hot steam baths, but because of weakness had to discontinue those. On examination nothing was visible or palpable, but there was excessive tenderness over a small area in

the posterior middle third of the leg. A week or two later he had another of these episodes in the region of the left thigh. Early in July he noticed some slight chilly sensations followed by a blushing of the skin and this in turn was followed by sweat. This would last a few hours, a feeling of weakness would develop, and then he would feel quite well. At this time he began noticeably to lose weight; he lost his appetite and could not sleep; his breathlessness on exertion was accompanied by marked palpitation of his heart.

With the above history he came in for an examination. He was pale, the extremities were cold and moist, there was evident loss of weight and what appeared to be an increased pulsation in the vessels of the neck and the abdominal aorta. The temperature was 98.4 degrees and the pulse was 108. The glandular system was negative, the heart beat was rapid, there were no shocks or palpable thrills, there was very little, if any, enlargement, but the sounds were rapid and there was a soft to and fro murmur with an early diastolic phase heard best at the fourth left costal area. The abdomen was scaphoid, the abdominal aorta pulsations were prominent and the solid organs not palpable. The urine was dark amber with a specific gravity of 1.028, acid and a strong trace of albumin. There was no sugar in the urine and microscopic examination showed several pus cells per field in the uncentrifuged specimen. The red blood count was 4,220,000, the white blood count was 8,250 and the hemoglobin was 86 per cent. He was asked to return the same day in the late afternoon and his temperature was found to be 101.4 degrees. He continued work intermittently, returning for examination more frequently as his bouts with chills, fever and sweats became more pronounced. Blood smears were examined for malaria, and agglutination reactions were run for typhoid, paratyphoid A and B and undulant fever. All were negative. X-rays of the lung field were negative. Leukocytes varied from 7,000 to 17,000. This patient was urged to enter the Mayo Clinic for a complete detailed study. Blood cultures showed a blood stream infection of *Streptococcus viridans*. He was very much encouraged by this and came home confident in the future treatment by the one and only drug. He was unable to return to work, however. In the course of a week or so he developed pain in the left upper quadrant of the abdomen which later radiated to the shoulder. This episode was followed by increased fever, sweats, diarrhea, nausea, cough and hematuria. There was a definite increase in albuminuria and many casts, both hyaline and granular, were found in the urine. After about three



weeks, he became so querulous and hard to manage because of discouragement that his wish was granted and sulfanilamide was given. His blood count at this time was: red blood count, 3,000,000; white blood count, 12,000; and hemoglobin, 75 per cent. The third day after the administration of sulfanilamide his white blood count had dropped to 2,200. His fever had disappeared, he had quit having sweats, and he felt quite encouraged. The sulfanilamide was withheld when the white blood count reached 4,000, but it continued on downward to the above figure, at which point pentnucleotide was used. The leukocytes returned to 4,000 but no increase could be obtained. The red blood count had decreased to 2,000,000, but transfusion was refused by the family when it was explained to them that it would not change the ultimate prognosis. He was bedfast, and about three weeks later he developed a sudden severe pain in the substernal area. He became very dyspneic, and expired in about thirty minutes. Autopsy privileges were refused.

#### CONCLUSIONS

After 140 years following the discovery of the pathology of this disease it has been found that drug therapy is of little value. Vaccines, serums and immunotransfusions have been of no value. Fever therapy has failed. Chemotherapy in itself has been of no avail because of the protection of the organisms by fibrin, making them inaccessible to the drug. To date the absence of definite proof of an increase in the percentage of recoveries discounts all the above methods of treatment. Experimental work now in progress by Kelson and White, and Hamburger and Katz, based on bacteriology and pathology of the disease, may prove of some value. Until something new is developed preventive medicine must be our only means of lowering the mortality rate from this disease.

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#### Discussion

**Dr. Frank Fuller, Keokuk:** In his work on diabetes Joslin says, "For the successful treatment of a chronic disease it is essential that the physician be convinced that his methods of treatment are improving." In a discussion of the paper on subacute bacterial endocarditis, as presented by the essayist, one is impressed by the fact that the methods of treatment of this disease are not improving.

If one confines himself to the whole study of the condition, there is abundant evidence that much advance has been made. If it were not for one's faith in the progressive energy which the profession has put into all apparently unsolvable problems, it would be difficult to take much encouragement from all the accumulated knowledge now possessed. It is just because of the never-ceasing research through hidden lanes and disconnected byways that one may hope, some day, to see some improvement in the treatment of this disease.

Dr. Morton has very properly reviewed the medical history and has shown how much thought and work have been given to develop what we now know. In his reference to the pathology he calls attention to the fact that the infection is usually grafted on a scarred valve resulting from former disease or on a congenitally deformed valve or endocardium. The destruction of the endothelial covering and its roughening permit the deposit of fibrin in which bacteria grow and become buried, and this is a most important point in relation to the failure of treatment by various methods of chemotherapy. The fragility of these deposits on the valves accounts for the common evidences of changes in the cardiovascular system, with the frequent emboli in various organs and in the skin. These extracardial manifestations are so often overemphasized that they frequently lead one away from the real condition, and a diagnosis of infections of typhoid, undulant fever, malaria, etc., is considered before a blood culture is made. This is not surprising because the essayist properly stresses the insidious character of the disease in the beginning. The symptoms are those, on the whole, of a blood stream infection. They are familiar enough and need no additional comment, other than the remark that cardiac symptoms are neither early nor prominent.

Dr. Morton says that the first requisite in treatment is prophylaxis if possible; that persons with cardiac lesions should remove all possible foci of infection, such as teeth, tonsils, sinuses, etc.; and that we should avoid disturbing these except under ideal conditions because the *Streptococcus viridans* is so frequently found in such foci. That is a summation devoutly to be wished, but until we can

obtain better cooperation, even in the brushing of teeth, we may miss much prophylaxis. As to drug treatment he truly states that the medical profession cannot be accused of nihilism, because everything has been tried.

He gives very clearly the research work which has demonstrated why chemotherapy is of no value in the treatment. It cannot penetrate the fibrin layer protecting the causative bacteria lodged in the endocardium. He calls attention to the experiments of Kelson and White in the use of heparin to prevent the formation of fibrin on the valves and thus make the organisms vulnerable to attack. This preparation made from liver, when injected intravenously, will prevent the coagulation of blood by preventing the changing of prothrombin into thrombin; but agents thus introduced may be more dangerous than efficient when they have passed from control. The essayist cites a series of twelve cases in which eleven patients died. Only one patient in another series of 65 cases is reported as recovering and this one had a gonococcus and a non-hemolytic anaerobic streptococcal infection. Of 88 cases of the *Streptococcus viridans*, one patient recovered; therapy in all 87 cases was without result.

It is most unfortunate, and somewhat humiliating, to know so much about the cause of a disease, its symptoms, pathology and diagnosis, and then be obliged to tell the family or patient that this is as far as anyone in the medical profession can go, that there is no cure. There is the hope that such a paper as has been here presented may stimulate some active research mind to work in the dark of this problem until he can find a slight ray of truth to illuminate what is now a hopeless failure.

#### THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

##### PROBABLE ACTINOMYCOSIS OF THE ORBIT

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In 1925, Sanford and Voelker<sup>1</sup> published the results of their geographic survey of actinomycosis in the United States. They collected 670 cases which had occurred in practically every state in the Union, but the disease was especially prevalent in the upper Mississippi Valley. At that time seventeen proved cases and three questionable ones had been reported by Iowa physicians. In addition fifteen residents of Iowa had been treated at the Mayo Clinic. Four of the seventeen proved Iowa cases had been reported from Dubuque County. Since that time the diagnosis has been confirmed in our laboratory in four

other instances. All of these were of the facio-cervical type. The case to be reported, while never verified by demonstration of the actinomycoses, was clinically at least, an additional one. It is of particular interest because of the location of the lesion.

#### CASE REPORT

The patient, a white farm boy sixteen years of age, was admitted to the Finley Hospital, June 29, 1933, because of "a painful swelling on the right side of the neck, and fever".

*Family History:* The patient's father died at sixty-four years of age of cancer of the prostate gland; his mother at fifty-four years of age of heart disease. One feeble-minded brother died at twenty-seven years of age of an unknown cause. One mentally deficient brother and three other brothers were living and well. The patient also had four living sisters who were highly neurotic.

*Past History:* Aside from the contagious diseases of childhood and a fractured arm a year before admission the patient had always been well.

*Present Illness:* About four months before admission the patient noticed a small sore or boil in the right malar region. This was followed by a parotid infection which lasted for three months. About two weeks before the present illness the swelling in the parotid region became pronounced, very painful and was accompanied by fever.

*Physical Examination:* The patient was a well developed and well nourished white boy. The eyes, ears and nose were negative. The pupils were equal in size and reacted normally to light and accommodation. The teeth were in good condition and there was no area of inflammation in the gums. The tonsils were small and pink in color. Externally there was a dull red, indurated swelling about the right parotid gland which was painful to light pressure. The remainder of the examination was normal. The temperature was 100 degrees, the pulse 78, and the respirations were 20 per minute. A white blood count was 13,200 with 77 per cent polymorphonuclear leukocytes.

*Preoperative Diagnosis:* Abscess of the right side of the neck.

*Operative Note:* An incision was made below the parotid gland and an abscess drained. A drain was inserted and the wound closed.

*Postoperative Diagnosis:* Abscess of the right parotid gland.

*Postoperative Course:* The temperature fell to 99 degrees and the patient was referred to his family physician for further treatment. The discharge from the abscess was not examined. After his return home the abscess drained for several



weeks but the drainage finally ceased. Then the right ear began to discharge and drained for two weeks. Following this his trouble subsided but flared up if he had a cold. He did not have severe pain with the ear infection.

*First Readmission:* The patient was again admitted November 12, 1934, because of "swelling and redness of the right eyelids". He stated that for three weeks, the right eye had been irritated and reddened. Three days before admission his right eyeball appeared prominent and the upper lid became markedly swollen and red. There was no pain but the eyelid was tender on palpation.

*Examination:* The right upper eyelid was swollen and reddened, especially in the outer quadrant. There was less redness and swelling of the outer quadrant of the lower lid. The eyeball was proptosed moderately but moved normally in all directions. The cornea was clear and the anterior chamber was of normal depth. The iris was negative. The pupils reacted promptly. The media was clear. There was a low grade optic neuritis with veiled upper and lower margins. The fundus was otherwise negative. There was a hard swelling over the region of the zygoma and outer margin of the orbit. This mass was felt extending to the upper and lower lids at their outer angles. No outline of the bony rim of the external orbital wall could be made out. There was considerable redness at the external canthus and edema of the orbital tissues. The tissues below the zygoma and in front of the right ear seemed atrophied, although this might be only relative. The parotid gland was not enlarged and on examination the saliva was seen flowing from the duct. The right auditory canal was free and the external ear was negative. The previous incision was healed. The temperature was 99.4 degrees.

*Provisional Diagnosis:* Tuberculosis or a malignant tumor of the orbit and zygomatic arch.

*Course in Hospital:* The Mantoux and Wassermann tests were negative. A white blood count was 9,400 with 65 per cent neutrophils.

*X-ray Examination:* The examination of the skull in relation to the right orbital region showed that there was a destructive process involving the zygomatic bone on the right side with destruction of a large portion of this bone. The lesion was entirely destructive with no reproduction of bone and we believed represented a malignant tumor. The possibility of an infectious process such as osteomyelitis could not be entirely ruled out. There was a haziness involving the right orbit and right maxillary sinus which we believed was due to edema. Special films taken of the optic canals showed them both to be normal. The sinuses other than this haziness in the right maxillary

were normal. The mastoids were not well developed but of a small celled type. The left was normal but there was some sclerosis in the right mastoid. This did not represent recent pathology. Examination of the chest showed no pathology.

Conclusions were probable malignancy of the right zygomatic bone; possibly an infectious process; and negative chest.

After nine days the patient was discharged and told to rest in one month.

About a week after returning home a small fluctuating area over the zygomatic arch developed and was opened. A little serous fluid with "fleck of pus" was obtained. Cultures of the pus were made and showed only rare colonies of staphylococci. The bacteriologist stated that in view of the amount of pus, it was unusual to find so scant a growth and suggested guinea pig inoculation if enough material could be obtained. Thereafter a spontaneous opening appeared at the outer angle of the orbit and this drained freely for a month. X-ray examinations on January 3 and March 29, 1935, showed no change. Subsequently for a period of a year other points of discharge developed and after drainage, closed spontaneously. In February, 1936, the right ear again drained mucoid material. Unfortunately during this time none of the drainage material was examined, although actinomycosis had been suggested as a possible diagnosis. From February, 1936, until the end of 1937 the lesion was quiescent although the right exophthalmos persisted, but the edema of the lids and conjunctiva disappeared.

*Second Readmission:* The patient was readmitted January 25, 1938, because of increased redness and bulging of the right eye preceded by a supra-orbital headache. The swelling about the zygomatic arch was about as evident as in previous examinations.

The x-ray examination of the bones of the face showed a marked change in the appearance of the right orbit and zygoma since the films taken in 1934. The zygomatic bone was sclerotic and thickened with one small, irregular thinned-out area in its interior portion. The lateral and superior wall of the orbit was also dense with evidence of an old destructive process in this part of the orbit which had also become sclerosed. The appearance was that of a chronic inflammatory process, the exact nature of which was in doubt.

It was decided to do an exploratory operation and an incision was made from the right external canthus one-half way to the external auditory canal along the upper margin of the zygomatic arch. The external rim of the orbit and the bone of the zygomatic arch were thoroughly explored,

but except for slight thickening seemed normal. Exploration nearly to the apex of the orbit was made on both sides of the periosteum; no pus was found but two small fistulous tracts could be traced under the zygomatic arch for a distance of three-fourths of an inch. These tracts were lined by granulation tissue and small pieces were taken for microscopic study. The latter showed only non-specific inflammatory tissue. Cultures made at the operation showed no actinomycoses, but a few colonies of staphylococci were grown. The operative incision healed normally but the eye condition did not change. It was decided to refer the patient to the department of ophthalmology of the State University of Iowa Hospitals for further study.



Photograph taken about five years after the onset of the infection.

*Subsequent Course:* Actinomycosis involving the orbit was considered the most likely diagnosis but the fungus was not demonstrated. Staphylococci and streptococci were found but these organisms were considered secondary invaders. The appearance of the lesion in February, 1938, is shown in the accompanying photograph taken at the University. In the belief that the prolonged history, the clinical course and the occupation of the patient justified the diagnosis of actinomycosis, he was given thymol and gradually increasing doses of potassium iodide, as well as a series of fourteen x-ray treatments at monthly intervals. In December, 1938, one sinus discharged for

about a week but since that time there has been no pain or discharge. There is still some exophthalmos and swelling due to scar tissue, but the lesion is quiescent; the patient has been working for over a year and apparently is cured.

#### CONCLUSION

This case illustrates the need of always keeping actinomycosis in mind as a possible diagnosis in slowly developing inflammatory lesions, especially those about the face. It also emphasizes the necessity of close cooperation between the clinicians and laboratory workers in their search for the etiologic agent in these types of lesions. With hindsight as a guide, it seems evident that in this case, with more intensive and more practical studies of the exudate from the lesion, the fungus would have been demonstrated sometime during the several years it persisted. Every clinician should understand the appropriate methods of demonstrating the fungi in pus. Too often we seem to believe that they can be found in routine smears or cultures, and we forget that the discovery of the so-called "sulphur granules" in the pus demands microscopic studies of the granules crushed between a cover slip and a glass slide when the organisms can usually be demonstrated if they are present. If this simple procedure had been carried out in our case when the first "abscess" was drained the correct diagnosis might have been made and the patient would have been saved several years of trouble.

#### REFERENCE

Sanford, Arthur H. and Voelker, Minna: Actinomycosis in the United States. Arch. Surg., xi:809-841 (December) 1925.

#### BROADCASTS OF THE AMERICAN MEDICAL ASSOCIATION

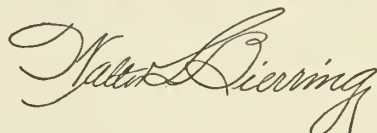
Arrangements have been made with the National Broadcasting Company for audiences to witness the current broadcasts of the American Medical Association—"Doctors at Work." This program is in dramatic form, and productions of this kind are interesting to observe as well as to hear.

Physicians living in Chicago or vicinity, or those contemplating visits to Chicago, may procure complimentary tickets to the broadcasts by addressing a request, stating the date desired and a possible alternate date, to the Bureau of Health Education, 535 North Dearborn Street, Chicago. Ordinarily requests should be limited to two tickets, but in special circumstances larger numbers may be available.

Programs are scheduled each Wednesday night, at 9:30 p. m., central standard time, in the studios of Radio Station WENR, nineteenth floor of the Merchandise Mart, Chicago. Visitors should be at the studio not later than 9:00 p. m.



# STATE DEPARTMENT OF HEALTH



## Birth Registration

ERIC P. PFEIFFER, M.D., Director

Division of Vital Statistics  
Des Moines

Two birth certificate forms are at present in use in Iowa, the Certificate of Birth and the Affidavit of Delayed Birth Registration.

### Certificate of Birth

The standard Certificate of Birth form is used in recording all current births. Approximately eight per cent of birth certificates reaching this office are either inaccurately or incompletely accomplished. When such a record reaches the Division of Vital Statistics, it is necessary that this record be corrected; thus, query forms are sent to the physician for the necessary information. Suggestions regarding certain of the paragraphs which comprise the standard birth certificate form are presented as follows:

1. The first paragraph of the Certificate of Birth form is herewith reprinted in part:

#### Place of Birth

(d) *Name of hospital or institution*.....

Physicians should check the completed certificate to determine that the name of the hospital or institution is added, providing the birth occurred in a hospital or institution; if the birth occurred at home, the word "none" should appear.

(e) *Mother's stay before delivery:*

*In hospital or institution*.....

*In this community*.....

It is recommended that physicians list the length of time a mother spent in the hospital or institution prior to delivery. If less than one day, "one day" should be listed; if one month and 10 days were spent consecutively in the hospital by the mother prior to delivery, the record should so indicate. Physicians should fill in the length of time which the mother spent in the community where the

birth occurred, prior to this delivery; for example: 20 years, 10 months and 5 days.

2. Paragraph 7 of the Certificate of Birth form follows:

*Number of months of pregnancy*.....

This paragraph should show the length of the gestation period in months.

3. Discrepancies frequently occur with reference to the items in paragraph 21:

*Total other children born to this mother (not including this one)*.....

Let us assume that this delivery was the fifth child born to a mother, that two had previously died and one was stillborn; the figure to insert would be 4.

(a) *How many other children of this mother now living?*.....

If two had died and one was stillborn, this question would be answered by the figure 1.

(b) *How many other children of this mother were born alive but are now dead?*.....

The answer would be 2.

(c) *How many children were born dead?*.....

Here the answer would be 1. Thus the figures after (a), (b) and (c) total that which follows the first question in paragraph 21, or 4.

4. Paragraph 27:

(a) *Was blood test taken?*..... (b) *Date taken*....., 19.....

These questions must be filled in by the physician, as provided for in the Iowa law.

5. Paragraph 30 reads as follows:

*In what month of pregnancy was mother first examined?* .....

This refers to the month of this pregnancy when the mother was first examined by any physician.

# IOWA STATE DEPARTMENT OF HEALTH—DIVISION OF VITAL STATISTICS AFFIDAVIT OF DELAYED BIRTH REGISTRATION

## (Explanation)

In past years many birth records were not filed at the time of birth as provided by statute, due to the neglect of those charged with the duty of filing said record. This affidavit is provided to take care of such cases and may be executed by the attending physician, midwife, parent, nearest relative or other person having full knowledge of the facts of this birth. NOT ACCEPTABLE IF SIGNED BY THE PARTY FOR WHOM IT IS MADE. SEE INSTRUCTIONS ON REVERSE SIDE.

I, \_\_\_\_\_, being duly sworn, depose and say that I am \_\_\_\_\_ years of age; that I have known the person named herein for \_\_\_\_\_ years; that I reside at \_\_\_\_\_ in the COUNTY OF \_\_\_\_\_, STATE OF \_\_\_\_\_; that the answers given to the following questions are true and correct as I verily believe.

FULL NAME OF CHILD \_\_\_\_\_

PLACE OF BIRTH: COUNTY OF \_\_\_\_\_ CITY OF \_\_\_\_\_

TOWNSHIP OF \_\_\_\_\_

STREET \_\_\_\_\_

Sex of Child	Twin, triplet, or other (To be answered only in event of plural births)	Number in order of birth	Legitimate	Date of birth Month      Day      Year
--------------	--	--------------------------	------------	---

Name of physician, midwife, or other person attending at this birth \_\_\_\_\_

## FATHER

Full Name \_\_\_\_\_

Birthplace  
State or Country \_\_\_\_\_

Color \_\_\_\_\_

Age at time of this birth      Years

Occupation at time of this birth \_\_\_\_\_

## MOTHER

Full Maiden Name \_\_\_\_\_

Birthplace  
State or Country \_\_\_\_\_

Color \_\_\_\_\_

Age at time of this birth      Years

Occupation at time of this birth \_\_\_\_\_

That the basis of my knowledge for answers given above is as follows \_\_\_\_\_

(Sign Here) \_\_\_\_\_ Name \_\_\_\_\_ Relationship \_\_\_\_\_

STATE OF \_\_\_\_\_ COUNTY, SS.

On this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, before me comes \_\_\_\_\_ and makes oath that the information given in this instrument subscribed by him is true and correct as he verily believes.

My commission \_\_\_\_\_

Notary Public in and for \_\_\_\_\_ County.

expires \_\_\_\_\_

State of \_\_\_\_\_

Do not write below these lines

Supporting evidence submitted herewith to establish place and date of birth (to be filled in by State Registrar): \_\_\_\_\_

Filed \_\_\_\_\_, 19\_\_\_\_

(State Registrar)

Accepted \_\_\_\_\_

(Director Division of Vital Statistics)

N. B. Any person making a false affidavit will be prosecuted.



6. It is recommended by the Iowa State Department of Health that physicians carefully examine all birth certificates, for completeness and accuracy before signing same.

#### Affidavit of Delayed Birth Registration

The second form for birth registration (see accompanying printed form) is the Affidavit of Delayed Birth Registration form, which must be accomplished by all who wish to register a birth which occurred prior to January 1, 1940. It will be noted that in the event such a form is accomplished for children under five years of age, additional documentary evidence is not required.

The affidavit form was recently revised by direction of the United States National Defense Council through the United States Department of Commerce, requiring that documentary evidence must accompany each affidavit and abstracted on the face of the certificate by the State Registrar where such delayed birth registration is accomplished for individuals over five years of age. It will be noted that three documents are necessary and must consist of three different original records or photostatic copies or certified copies thereof. All must be more than five years old. The selection of these three records can be made from sixteen different types of acceptable records as indicated in paragraph VI of the instructions printed on the reverse side of the affidavit.

No charge is made for filing such an affidavit, but a fifty cent (50c) fee is charged for certified photostatic copies of any vital record filed with the Iowa State Department of Health, as provided for in the 1939 Iowa Code, Section 2426.

Physicians interested in being supplied with Affidavit of Delayed Birth Registration forms will receive same upon request from the Iowa State Department of Health.

Where parents desire notification of birth records on notification forms provided by the Iowa State Department of Health, no charge will be made, providing the person indicated on the birth record is under twenty-one years of age.

The Iowa State Department of Health intends that parents of all newborn children should receive birth notification forms; these usually reach the parents within three months after receipt of the birth certificate.

#### PNEUMONIA FILM FOR MEDICAL MEETINGS

The Department has available for use in county or district medical meetings, a technicolor film on pneumonia. The film was prepared under the direction of Norman H. Plummer, M.D., and Herbert K. Ensworth, M.D., of New York Hospital.

Arrangement has been made in cooperation with officers of county medical societies and hospital staffs, for the pneumonia film to be shown before medical groups in eight cities in central and western Iowa. The film will be presented by F. E. Schmidt, M.D., of Chicago. The tentative schedule of meetings as planned for February 10 to 14, giving date, time, auspices and city, follows:

February 10, Monday evening, Iowa Methodist Hospital Staff, Des Moines.

February 11, Tuesday noon, Greene County Medical Society, Jefferson.

February 11, Tuesday evening, Woodbury County Medical Society, Sioux City.

February 12, Wednesday noon, Carroll County Medical Society, Carroll.

February 12, Wednesday evening, Pottawattamie County Medical Society, Council Bluffs.

February 13, Thursday noon, Page County Medical Society, Clarinda.

February 13, Thursday evening, Webster County Medical Society, Fort Dodge.

February 14, Friday noon, Story County Medical Society, Ames.

The pneumonia film illustrates the modern management of pneumococcus pneumonia, with consideration of chemotherapy, chemoserotherapy and empyema. Emphasis is placed on the essential part played by the laboratory in accurate bacteriologic diagnoses of pneumonia. It is planned to reserve time at each meeting for informal discussion of pneumonia and the rôle of the physician and the State Department of Health in relation to control measures.

The Department is prepared to place the film at the disposal of other medical societies for use in meetings during the coming weeks.

#### PREVALENCE OF DISEASE

Disease	Dec. '40	Nov. '40	Dec. '39	Most Cases Reported From
Diphtheria .....	8	19	35	For State
Scarlet Fever .....	333	293	417	Polk, Linn, Lee
Typhoid Fever .....	4	3	1	Buena Vista, Jasper, Lee, Polk
Measles .....	466	126	214	Dubuque, Buchanan
Smallpox .....	8	2	43	For State
Whooping Cough .....	123	108	107	For State
Brucellosis .....	16	12	23	For State
Chickenpox .....	422	362	463	Black Hawk, Webster, Madison
Influenza .....	247	6	36	Washington, Page, Clarke
Meningitis, Epidemic	4	1	0	Pottawattamie, Black Hawk, Greene
Mumps .....	235	115	379	Black Hawk, Muscatine
Pneumonia .....	274	103	185	For State
Poliomyelitis .....	11	33	32	For State
Tuberculosis				
Pulmonary .....	77	5	31	For State
Tularemia .....	14	1	79	Wapello, Clay, Des Moines, Henry, Johnson, Linn, Poweshiek
Gonorrhea .....	103	114	122	For State
Syphilis .....	206	216	277	For State

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## A VACCINE FOR INFLUENZA

Numerous contributions to medical knowledge have been the result of an accidental discovery in the laboratory. Some totally unforeseen outcome of an experiment has proved to have useful clinical application. A recent example of the accidental discovery of a complex influenza vaccine by Horsfall and Lennette of the Rockefeller Foundation is of timely interest.

These authors, in the study of influenza, were experimenting on ferrets. The animals were inoculated intranasally with the 1939 strain of human influenza virus. In the course of the experiment several of the animals with influenza developed a concurrent infection with distemper. Inasmuch as distemper is epizootic, an attempt was made to protect the normal animals in the laboratory. A formalized vaccine was prepared from the lungs and spleens of the animals who had concurrent influenza and distemper. The vaccine was injected subcutaneously into 157 normal ferrets. Two days after the administration of the vaccine, groups of the vaccinated ferrets were inoculated intranasally with large doses of three antigenically different strains of human influenza vaccine. Much to the surprise of the authors none of the animals developed experimental influenza. The injection of the vaccine had protected the ferrets from three different strains of influenza virus which is superior to the immunity which results after actual recovery from infection with the influenza virus.

After repeated attempts it was finally found that the multivalent vaccine could be reproduced by inoculating ferrets simultaneously with mixtures of human influenza virus and canine distemper virus. This formalized vaccine protected

the animals, not only from canine distemper, but also from all strains of human influenza virus. When the vaccine was tested on human volunteers, it resulted in a definite increase in multivalent virucidal antibodies.

The authors have determined that the results are not due to antigenic similarities between distemper and influenza virus. They conclude that in the presence of concurrent distemper infection the human influenza virus undergoes some biochemical mutation which renders it less virulent, less specific and more broadly antigenic than the original virus.

The fact that vaccination of ferrets with human influenza virus does not afford complete immunity even against homologous strains, but that the new complex vaccine establishes a broader multivalent immunity is the practical result of this accidental laboratory discovery. A new field of investigation in immunity is opened up, but whether similar vaccines with other viruses will be effective remains to be proved.

## PHYSICAL FITNESS AMONG REGISTRANTS

As mobilization of the nation's forces proceeds, the question is frequently raised as to the degree of physical fitness for military service which will be found among the registrants. Reference to statistics for World War I might be expected to furnish the answer, but not entirely for reasons which will be pointed out later. According to a recent bulletin of the United States Public Health Service, twenty-one per cent in the World War draft of 1917-1918 were rejected for military service. The table below lists the defects found per 1,000 total drafted men:

Orthopedic impairments.....	213.16
Eye defects .....	61.01
Cardiovascular-renal diseases .....	50.20
Underweight .....	31.14
Hernia and inguinal rings.....	55.36
Tuberculosis (all forms) actual or suspected.....	24.74
Defective or deficient teeth.....	26.27
Nervous or mental diseases.....	24.53
Ear defects .....	15.45
Venereal diseases .....	46.77
Varicose veins, varicocele .....	8.75
Goiter .....	11.38
Hypertrophic tonsillitis .....	33.77
Arthritis and allied affections.....	3.48
Asthma .....	2.33
Other diseases or defects.....	53.56

All diseases or defects ..... 661.94

On the basis of these figures some 1,200,000 men will have to be examined in order to meet the quota of 800,000 by July 1, 1941. However, as the January issue of the *New York State Medical Journal* points out, there is reason to believe that we are far healthier now than at the time of the last war. The experience of the Metropolitan Life Insurance Company attests this view. Among men of draft ages insured in the industrial depart-



ment of this company, tuberculosis has declined 75 per cent as a cause of mortality in the last twenty-five years. In approximately the same period, mortality from heart disease has dropped 40 per cent for white and 60 per cent for colored men. Mortality figures among all white policyholders between twenty-five and forty-four years of age have dropped by about two-thirds.

Whether such evidence of improved health conditions in the nation will be reflected in an improvement in the percentage of men found fit for military duty in 1941 remains to be seen. It may be, of course, that the reverse will be found true, that modern medical science is now keeping men alive who formerly would have succumbed to their physical impairments. In this case, the proportion rejected will be greater than in the first World War. Then, too, the question of standards must be considered. Whether these are more or less strict now than in 1917-1918, we are not informed. At any rate, a great deal of valuable information concerning the trend of health among our young male population should come out of the opportunity for comparing the results of World War I draft figures with those of 1940-1941.

#### HEALTH PROJECT OF THE NATIONAL YOUTH ADMINISTRATION

Under the direction of Theodore P. Eslick, National Youth Administrator for Iowa, the National Youth Organization is now carrying on a health project in the state of Iowa.

The purpose of the health activity of the organization is first, to ascertain the health status of all youth employed; second, to bring to par the health of all NYA youth who suffer from remediable diseases; and third, to instill in the youth proper health habits. In an endeavor to reach this objective, the National Youth Administration will give health examinations from now on to all youth prior to their employment, and as rapidly as possible is extending this privilege to all youth who are already working for the administration.

The defects disclosed by the health examination will be properly dealt with by instituting efficient follow-up procedures. In order to develop proper health habits in the youth, short health talks will be presented by competent physicians to all youth employed.

This program is being carried out in cooperation with our own State Health Department, the United States Public Health Service and local voluntary health organizations. It was endorsed by State and Territorial Health Officers in a conference recently held in Washington, and coopera-

tion of the Defense Committee of the American Medical Association has also been promised.

The actual work is being conducted by local doctors who have been appointed to this task after they have been recommended by responsible officers of their county medical societies. Physicians so employed receive a small stipend for their services.

#### INCOME TAX RETURNS

##### Federal

Income tax blanks have been mailed by the Federal Collector of Internal Revenue to those who filed returns in 1940, but since the basis for filing returns has been changed, some physicians who did not make a report in 1940 must do so in 1941. All single persons having a gross income of \$800.00 or more in 1940, and all married persons with a gross income of \$2,000.00 or more, must make a report on or before March 15. Failure to receive a blank does not relieve one of this responsibility. It should be noted that the liability for filing returns for 1940 is based on *gross*, rather than *net* income. The tax is paid, however, on gross income less allowable deductions, exemptions and earned income credit. A physician's gross income is the total amount of money received by him during the year for professional services regardless of when the services were rendered, plus money he has received as profits from investments and speculation, or as compensation and profits from other sources.

From this gross income the physician may subtract allowable deductions. Under this are included all current expenses necessary in carrying on his practice, such as office rent, office maintenance, supplies (dressings, drugs, chemicals, professional journals and books, furniture or instruments which have a useful life of less than one year), dues to medical societies, travel expense incurred in attending patients or medical meetings (but not for attending postgraduate courses), automobile expense incurred in the practice of his profession, social security taxes paid on employees, insurance premiums (against liability for injuries by a physician's automobile while in use for professional purposes, against damages for alleged malpractice, and against loss from theft of professional equipment and damage to or loss of professional equipment by fire or otherwise), and the usual deductions such as general property taxes, state income tax paid in 1940, Iowa sales tax (provided an itemized record of same is kept), contributions to church and organized charity, and interest on indebtedness. The three cent state tax on gasoline is also

deductible for gasoline used in pleasure cars, as is the license fee. Depreciation may be charged on equipment used over a period of years, but must not be more each year than is necessary to cover the actual depreciation.

All of these allowable deductions are subtracted from the gross income figure, giving the net income. Of this figure, the physician is allowed a credit of ten per cent of the earned net income, provided the net income is not over \$14,000.00. If the net income is less than \$3,000 from all sources, the physician may deduct ten per cent of the net income regardless of whether or not it is earned income. In addition, he is allowed an exemption of \$800.00 if unmarried, \$2,000.00 if married and living with his wife, and \$400.00 for each dependent. This figure, plus the earned income credit, is deducted from the net income, and the tax figured on the balance. Rates for computing the tax are set forth on the forms and are roughly four per cent on net incomes up to \$4,000.00. A graduated surtax is imposed on net incomes of more than \$4,000.00. To this regular income tax, there has been added a defense tax of ten per cent.

Should questions arise in connection with filling out the returns for the federal income tax blanks, physicians may write the central office of the State Medical Society or may inquire at the field division zone offices located in the post offices in the following cities: Ames, Burlington, Carroll, Cedar Rapids, Cherokee, Council Bluffs, Creston, Davenport, Dubuque, Fort Dodge, Grinnell, Iowa City, Keokuk, Mason City, Ottumwa, Sheldon, Shenandoah, Sioux City, Spencer and Waterloo, the City Hall in Clinton, the Court House in West Union, and the United States Court House in Des Moines.

#### State

State income tax returns are due on or before March 31. Those responsible for making returns are single persons with a net income of \$1,000.00 or more, married couples with a net income of \$1,500.00 or more, and all individuals with a gross income of \$3,000.00 or more in 1940. Tax is paid on gross income less allowable deductions. Gross income includes the money received by the physician for services rendered, plus such money as he may receive from investments and speculation and other sources. If part of the income is for services rendered prior to 1934, such money should not be included, because income for years prior to 1934 is not taxable. Physicians may compute their tax upon the basis of actual money received during the year, or upon the basis of charges made for services during the year whether

collected or not, depending upon the actual method used in keeping accounts.

Allowable deduction for physicians include professional expenses and the usual deductions authorized by law, such as general property taxes, federal income tax paid in 1940, sales tax, contributions to church and organized charity, interest on indebtedness, etc. These deductions are explained on the form. Under professional expenses may be included the cost of supplies used in practice, automobile expense incurred in making professional calls, dues to professional societies, subscriptions to professional journals, office rent, depreciation and maintenance. Insurance premiums (professional) and social security taxes paid on employees are deductible. The three cent state tax on gasoline used for pleasure and the automobile license fee of pleasure cars may be deducted. Travel expense incurred in attending professional meetings is deductible, but that for attending postgraduate courses is not.

These allowable deductions, when subtracted from the gross income, give the net income figure. The tax rate is given on the forms and is briefly, one per cent on the first \$1,000.00, two per cent on the second \$1,000.00, etc. On incomes of \$4,000.00 or more, five per cent tax is paid. From the tax as figured, a deduction of \$10.00 may be made for a single person, \$20.00 for a married couple, and \$5.00 for each dependent.

It should be remembered that in computing both the federal and state tax, the burden of proof is on the taxpayer. He must keep accurate records to show he is entitled to the deductions claimed. Filing income tax returns need not be an overwhelming task if one will read the blanks carefully and follow the procedures as outlined. The federal and state returns, while not identical, are similar enough so that both forms may be filled out at the same time. Once the net income figure is established, it is not difficult to compute the tax.

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#### FIFTH NATIONAL SOCIAL HYGIENE DAY

Widespread public observance of the Fifth National Social Hygiene Day will take place throughout the nation on Wednesday, February 5, 1941. Under the auspices of the American Social Hygiene Association, the United States Public Health Service, and special state and community sponsoring agencies, five great regional conferences will be held in New York, Philadelphia, St. Louis, New Orleans and Los Angeles. Last year five thousand communities in every part of the country celebrated Social Hygiene Day, and 1941



should show many more enlisted in this campaign for preventive medicine and social health.

The general theme for this year's campaign is "Social Hygiene and National Defense". In a message to the 30,000 members of the American Social Hygiene Association, President Ray Lyman Wilbur says, "We are now on our way to one of the most important years in all our work. Our resources of staff and materials, of course, have been applied primarily to the job assigned us in the National Defense program—to prevent an epidemic of syphilis and gonorrhea among soldiers, sailors and industrial workers. Records since 1819 show that whenever large numbers of young men have been concentrated for national emergencies, a great increase in venereal disease has occurred. Much was done to limit that increase during the World War; and this time we must prevent it."

Undeniable progress is made each year in efforts to control the spread of venereal disease. The very nature of the problem, however, permits no periods of relaxation in our vigilance. If we are to be successful we must not confine our interest to the one day, February 5, but we must carry on a continuous campaign of lay education throughout the other 364 days of the year. The rôle of the medical profession in this fight is an important one—the responsibility of giving adequate information concerning the venereal diseases to young men and women in high schools and colleges. Knowledge of the tragic consequences of these diseases will prove to be the most effective weapon at our disposal in the effort to rid our country of syphilis and gonorrhea.

#### MEDICAL PREPAREDNESS\*

As reported in the January Journal, each county medical society in Iowa has been asked to prepare a list of the physicians in its environs who should be exempt from military service. Determining factors in making such a list were population and character of county; age and health of physicians; indispensability of physician to community because of specialty or need; financial condition of physician and number of dependents; and medical facilities of community.

As this Journal goes to press, reports have been received from the seventy-six counties listed below. Your Committee on Medical Preparedness wishes to express its appreciation for the thorough manner in which these reports have been prepared. Many essential data have been included, and the final determination of exempt physicians, which

is to be completed by the state committee, has been made much easier by the county appraisals.

The following counties have sent in their reports:

Adams	Jackson
Allamakee	Jefferson
Appanoose	Johnson
Audubon	Jones
Black Hawk	Kossuth
Bremer	Linn
Buchanan	Louisa
Buena Vista	Lucas
Butler	Lyon
Calhoun	Madison
Carroll	Marshall
Cass	Mitchell
Cerro Gordo	Monroe
Cherokee	Montgomery
Chickasaw	Muscatine
Clay	Osceola
Clayton	Page
Clinton	Palo Alto
Dallas	Plymouth
Davis	Pocahontas
Decatur	Poweshiek
Delaware	Ringgold
Dickinson	Sac
Dubuque	Shelby
Emmet	Sioux
Fayette	Tama
Floyd	Taylor
Fremont	Union
Greene	Van Buren
Guthrie	Wapello
Hamilton	Warren
Hancock	Washington
Hardin	Wayne
Harrison	Webster
Henry	Winnebago
Howard	Woodbury
Humboldt	Worth
Ida	Wright

Your Committee on Medical Preparedness will meet January 30 to complete the state list. It is hoped that the balance of the counties will have reported by that time; if they have not, the committee will use the information available at the state office to make the determinations and report to the War Department.

#### REPRINTS FOR THE ARMY MEDICAL LIBRARY

The Army Medical Library is soliciting author's reprints to place in a special collection, catalogued by author, to form a supplementary source of material when volumes of original publication are temporarily unavailable. Reprints should be mailed to The Army Medical Library, Washington, D. C.

\*From the Committee on Medical Preparedness.

### NATIONAL CONFERENCE ON MEDICAL SERVICE

The Fifteenth Annual Meeting of the National Conference on Medical Service, which was formerly the Northwest Regional Conference, will be held at the Palmer House, Chicago, on Sunday, February 16, 1941. Dr. Forrest L. Loveland of Topeka, Kansas, president and Dr. Harold M. Camp of Monmouth, Illinois, secretary, have announced the five basic subjects which will be presented in symposium form, with time scheduled for question and answer periods:

1. Voluntary Group Medical Care Programs
2. Medical Preparedness
3. Postgraduate Plans of State Medical Societies
4. Medical Legislative Problems
5. Medical Care for Social Security Clients

During the meeting a talk will be given by Mr. C. H. Wantz of the General Electric X-Ray Corporation, and president of the Medical Exhibitors Association, on the subject, "The Annual Meeting from the Standpoint of the Exhibitor".

Iowa physicians will be especially interested in this meeting, since the present organization is an outgrowth of informal gatherings first instituted some ten years ago by officers of the state medical societies in Minnesota, Wisconsin and Iowa. Any physician interested in the economic side of the practice of medicine is urged to attend the sessions, where he will have the privilege of discussing the subjects to be presented.

### AMERICAN COLLEGE OF SURGEONS, SECTIONAL MEETING IN MINNEAPOLIS

March 10, 11 and 12 have been set as the dates for a Sectional Meeting of the American College of Surgeons in which the states of Minnesota, North and South Dakota, Iowa, Nebraska, Montana, Kansas and Wisconsin, and the province of Manitoba, Canada, will participate. Headquarters will be at the Nicollet Hotel in Minneapolis.

The sixteen approved hospitals of Minneapolis will provide the clinical background for the session. Many of them will hold operative and non-operative clinics each morning during the meeting. Demonstrations of hospital procedures will be presented for the hospital executives who will attend the Hospital Conference which will also be sponsored by the College during this time.

Surgeons from all parts of the country will address the scientific sessions and lead the conferences and panel discussions. Among them will be the president of the College, Dr. Evarts A. Graham, pro-

fessor of surgery at Washington University Medical School, St. Louis. Educational and scientific exhibits will be on display at the headquarters hotel, as well as motion pictures portraying surgical and hospital procedures. Each day's program will begin at 8:00 a. m., and continue until 10:00 p. m., with a regular schedule of clinics, conferences, motion pictures, panel discussions, etc. The final feature of the three days' session will be a public meeting on the evening of March 12, on the general subject of "Conservation of Health".

Subjects for panel discussions during the course of the meeting are:

- Evaluation of Disability Following Fractures
- Blood Transfusion
- Carcinoma of the Colon and Rectum
- Chemotherapy in Surgical Infections
- Choice of Operation for Relief of Vesical Neck Obstruction
- Complications in Surgery of the Biliary Tract
- Cranio-cerebral Injuries
- Endocrinology in Gynecology
- Gastric Surgery for Non-Cancerous Lesions
- Hand Injuries
- Indications for Cesarean Section
- Proper Choice of Anesthetics with Indications and Contraindications
- Thoracic Surgery
- Thyroid Surgery
- Treatment of Hernia by Surgery and by Injection
- Use of Chemotherapy Before and After Urologic Surgery
- Varicose Veins
- Cancer

Among the speakers at the evening session and leaders in panel discussions are:

- Dr. Frank E. Adair and Dr. John Scudder of New York
- Dr. I. Mims Gage of New Orleans
- Dr. Edwin C. Hamblen of Durham, North Carolina
- Dr. C. C. Higgins of Cleveland
- Dr. David Cleveland and Dr. Roland S. Cron of Milwaukee
- Dr. Howard K. Gray of Rochester, Minnesota
- Dr. Paul B. Magnuson, Dr. Warren H. Cole, Dr. C. B. Puestow, Dr. Michael L. Mason, Dr. Marshall Davison and Dr. R. W. McNealy of Chicago.

The clinical program will also include a wide range of subjects. Of special interest will be the cancer clinic and the fracture clinic, and a presentation by the younger surgeons of surgical research which is now in progress.

The medical profession at large, as well as hospital trustees, superintendents, pathologists, dietitians, and other hospital executive personnel, are invited to attend the sessions of the Sectional Meeting and the Hospital Conference.

### IOWA STATE EXECUTIVE COMMITTEE

- William W. Pearson, M.D., Des Moines, Chairman
- Prince E. Sawyer, M.D., Sioux City, Secretary
- Donald C. Conzett, M.D., Dubuque, Counselor
- Gordon F. Harkness, M.D., Davenport, Counselor
- George H. Scanlon, M.D., Iowa City, Counselor



# SPEAKERS BUREAU ACTIVITIES

## Marshall County Postgraduate Medical Course

The Speakers Bureau, in cooperation with the Marshall County Medical Society, opened another series of nine monthly postgraduate medical lectures in Marshalltown with a meeting Tuesday, January 7, at which Dr. Irving S. Borts, Associate Director of the State Hygienic Laboratory at Iowa City, presented Common Laboratory Procedures and Their Significance. The remaining meetings tentatively scheduled are as follows:

- Feb. 4 Arthritis, Paul B. Magnuson, M.D., Associate Professor of Surgery, Northwestern University Medical School, Chicago.
- March 4 Chest Injuries, Jerome R. Head, M.D., Assistant Professor of Surgery, Northwestern University School of Medicine, Chicago.
- April 1 Indigestion, Andrew B. Rivers, M.D., Associate Professor of Medicine, Mayo Clinic, Rochester.
- May 6 Diseases of the Kidney, Gilbert J. Thomas, M.D., Clinical Associate Professor of Urology, University of Minnesota Medical School, Minneapolis.
- June 3 Preoperative and Postoperative Care: Vitamins in Surgery (Colored Motion Picture), Charles B. Puestow, M.D., Associate Professor of Surgery, University of Illinois College of Medicine, Chicago.
- Oct. 7 Cancer, A. C. Broders, M.D., Professor of Pathology, Mayo Clinic, Rochester.
- Nov. 4 The Acute Abdomen, Arnold S. Jackson, M.D., Jackson Clinic, Madison.
- Dec. 2 (Subject to be announced), Max Thorek, M.D., Chicago.

These meetings are held on the first Tuesday of each month at the Hotel Tallcorn, and the two hour lecture period follows a six o'clock dinner. The chairman of the program committee is Dr. Raymond S. Grossman of Marshalltown, who extends a cordial welcome from his Society to any physicians in the surrounding counties who wish to attend these meetings.

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## Boone-Story Postgraduate Medical Course

The Boone and Story County Medical Societies opened their series of postgraduate medical lectures Friday evening, January 31, with a dinner meeting held in Boone at the Hotel Holst, at which time Dr.

Charles K. Maytum, Assistant Professor of Medicine at the Mayo Clinic, gave a lecture on Allergy in General Practice. The remainder of the schedule as tentatively arranged by the Speakers Bureau follows:

- Ames, Feb. 27, Making a Neurological Examination, Wm. Thomas Peyton, M.D., Associate Professor of Surgery and Neurological Surgery, University of Minnesota Medical School, Minneapolis.
- Boone, March 27, Urology in General Practice, Charles D. Creevy, M.D., Associate Professor of Surgery and Urology, University of Minnesota Medical School, Minneapolis.
- Ames, April 24, Demonstration of Laboratory Procedure for the General Practitioner, Victor B. Buhler, M.D., Pathologist, Kansas City General Hospital, Kansas City.
- Boone, May 29, Rheumatic Heart Disease, Hugh McCulloch, M.D., Associate Professor of Clinical Pediatrics, Washington University School of Medicine, St. Louis.
- Ames, June 26, Immediate Treatment of Burns, Harvey S. Allen, M.D., Chicago.
- Boone, Sept. 25, Therapeutic Value of X-Ray, Arthur U. Desjardins, M.D., Professor of Radiology, Mayo Clinic, Rochester.
- Ames, Oct. 23, Hand Infections, Michael L. Mason, M.D., Associate Professor of Surgery, Northwestern University Medical School, Chicago.
- Boone, Nov. 13, Pediatrics, Charles A. Aldrich, M.D., Associate Professor of Pediatrics, Northwestern University Medical School, Chicago.
- Ames, Dec. 11, (Subject to be announced), Everett D. Plass, M.D., Professor of Obstetrics and Gynecology, University of Iowa, College of Medicine, Iowa City.

The meetings in Ames are to be held in the Sheldon-Munn Hotel and those in Boone in the Holst Hotel. All programs begin with dinner at 6:30 p. m., followed by a two hour lecture period. The program chairman for this series of postgraduate medical lectures is Dr. Joe G. Fellows of Ames, who speaks for the Societies in inviting the physicians in the surrounding counties to attend these meetings.

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## Spirit Lake Postgraduate Medical Course

The Speakers Bureau will open a postgraduate medical course in Spirit Lake on Tuesday, February 18, for the physicians of the Dickinson, Emmet

and Clay County Medical Societies and vicinity. The tentative schedule for this course is as follows:

- Feb. 18 Common Laboratory Procedures and Their Significance, Richard F. Birge, M.D., Des Moines.
- March 18 Common Fractures and Their Treatment, Fred L. Knowles, M.D., Fort Dodge.
- April 15 Nephritis, Herbert W. Rathe, M.D., Waverly.
- May 20 Urology in General Practice, Lawrence E. Pierson, M.D., Sioux City.
- June 17 Diagnosis of Acute Surgical Abdomen, August R. Anneberg, M.D., Carroll.
- July 15 Common Diseases of the Eye, Ear, Nose and Throat, James E. Reeder, M.D., Sioux City.
- Sept. 16 Treatment of Heart Failure, Draper L. Long, M.D., Mason City.
- Oct. 21 Common Diseases of the Skin and Their Treatment, Wendell M. Willett, M.D., Des Moines.

Dr. F. L. R. Roberts of Spirit Lake, program chairman for the course, is anxious that all physicians in that vicinity attend this series of postgraduate medical lectures.\* The meetings will be held at the Antlers Hotel in Spirit Lake with dinner at 6:30 p. m., followed by the two hour lecture period at 7:30 p. m. Enrollment for the course is open to all physicians in that locality, and the registration fee of \$5.00 will be payable to Dr. Roberts at the opening meeting.

\*To date nineteen physicians have enrolled.

#### Poweshiek County Postgraduate Medical Course

The Poweshiek County Medical Society will sponsor a series of weekly postgraduate medical lectures during the month of October. No definite program has been selected for the course as yet. However, the Speakers Bureau has outlined for their consideration three tentative programs covering pediatrics, obstetrics and orthopedics. The pediatric subjects submitted are: Infant Feeding; Upper Respiratory Infections in Children; Infectious Diseases in Childhood; and Immunizations, Vaccinations and the Use of Immune Serum. The obstetric program is: Prenatal Care; The Technic of Home Delivery; Postpartum Care; and Common Obstetric Abnormalities and Their Treatment. The orthopedic lectures are: Fractures of the Upper Extremities and Their Management; Fractures of the Lower Extremities and Their Management; Fractures of the Spine; and Fractures of the Pelvis. The completed program for the chosen phase of medicine will be carried in an early issue of the JOURNAL.

#### Recorded Postgraduate Medical Lectures

The Speakers Bureau again wishes to remind county medical societies of its recorded medical lectures. Any society desiring to use one of these recordings for its scientific program should write the Speakers Bureau for the reservation as early as possible. This phase of our postgraduate medical education is progressing rapidly, but many county medical societies have not yet availed themselves of the opportunity to hear these lectures by outstanding authorities in the field of medicine. The following records are now available:

Diseases of the Heart; Diagnosis and Treatment, Hugh McCulloch, M.D., St. Louis.

Diseases of the Gallbladder (accompanied by slides), R. Russell Best, M.D., Omaha.

The Acute Abdomen, Arnold S. Jackson, M.D., Madison.

Diseases of the Newborn, Irvine McQuarrie, M.D., Minneapolis.

State and City Wide Plan for the Care of the Premature Infant (records being made at this time—will be available soon), Julius H. Hess, M.D., Chicago.

Office Gynecology (records being made at this time—will be available soon), Joseph L. Baer, M.D., Chicago.

#### Smallpox Announcement

The December, 1940, issue of the JOURNAL carried a short article regarding the smallpox announcement made in conjunction with the weekly radio broadcasts sponsored by the Iowa State Medical Society. This announcement has been carried on each program, and the Speakers Bureau is pleased to report that many replies have been received to date. Fifty to seventy-five smallpox bulletins, which are published by the State Department of Health, have been mailed from our office to persons replying to the announcement.

#### RADIO SCHEDULE

WSUI—Tuesdays at 1:30 p. m.

WOI—Wednesdays at 2:45 p. m.

- Feb. 4-5 Social Hygiene, Clifford W. Losh, M.D.
- Feb. 11-12 The Training of an M.D., Ewen M. MacEwen, M.D.
- Feb. 18-19 Indigestion, Herbert W. Rathe, M.D.
- Feb. 25-26 The Common Cold, James E. Reeder, Jr. M.D.



# WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*

5822 North Waterbury Road, Des Moines

*President*—MRS. ELBERT T. WARREN, Stuart

*President Elect*—MRS. W. R. HORNADAY, Des Moines

*Secretary*—MRS. FRED MOORE, Des Moines

*Treasurer*—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

## HEALTH ESSAY CONTEST

The Woman's Auxiliary to the Iowa State Medical Society and the Speakers Bureau of the Iowa State Medical Society have announced the opening of the Eighth Annual Health Essay Contest, under the joint sponsorship of the two groups. Essays this year will be written on the subject "Food for Health's Sake", with the following subdivisions: the vital factors of food; what constitutes an adequate diet; how vitamins fortify; and the importance of sanitation and pure food. The contest closes March 15, 1941, and all essays must be in the hands of the contest committee chairman, Mrs. W. A. Seidler of Jamaica, by that date. Announcement of the winners will be made on April 16, 1941, through the press and on the regular Iowa State Medical Society broadcast over Radio Station WOI, Ames, Iowa, at 2:45 p. m.

Additional information may be secured from school superintendents or English teachers in the high schools, or by corresponding with Mrs. W. A. Seidler of Jamaica, Iowa.

In addition to the prizes officially awarded by the Woman's Auxiliary, the federated clubs in some towns are offering prizes for the first and second local winning essays. The winners are then asked to read their papers at a club meeting. We feel that this is an excellent means of stimulating local interest in the contest, in the subject under discussion and in the sponsors of the project. Individual members throughout the state can be very helpful in establishing these contacts, thus supplying the educational background which results in a more complete and accurate understanding of the medical profession and its various health activities.

The continued interest in the Health Essay Contest is very gratifying to the committee, indicating as it does an active desire on the part of these school children for additional sound information on the subject of health. The value of early training in any field cannot be overemphasized, and especially is this true of health and health habits. We are sure that our members will assume their responsibilities in making this year's contest successful and worthwhile.

Mrs. W. A. Seidler, Chairman  
Health Essay Contest Committee

## MEDICAL LEGISLATION

In spite of the emphasis which is being placed on national defense in this session of Congress, the question of medical care will undoubtedly receive considerable attention. Indicative of this trend is the following thought from President Roosevelt's message to Congress on January 6, 1941: "We should widen the opportunities for adequate medical care". Senator Wagner of New York, has announced through the press that he and others would sponsor a comprehensive proposal for an expanded national health program in line with President Roosevelt's suggestion.

As soon as copies of the bill are available, more detailed information will be carried in this section, so that Auxiliary members may be fully acquainted with the status of pending medical legislation.

Mrs. Charles Ryan, Chairman  
Legislative Committee

## Polk County

The Woman's Auxiliary to the Polk County Medical Society met Tuesday, January 7, at Younker's Tea Room in Des Moines for luncheon. During the subsequent business meeting conducted by Mrs. E. J. Harnagel, president, the following officers were elected for the year 1941: Mrs. Wilbert W. Bond, president; Mrs. Juluis S. Weingart, president elect; Mrs. John B. Synhorst, vice president; Mrs. Donald H. Kast, secretary; and Mrs. Elmer E. Kottke, treasurer.

## DO YOU KNOW

That Wednesday, February 5, 1941, has been designated as Fifth National Social Hygiene Day, with five regional conferences being held in New York, Philadelphia, St. Louis, New Orleans and Los Angeles?

That both syphilis and gonorrhea are infectious diseases, the causative germs of which are well known?

That the opportunity and means for the control of these diseases are at hand?

That according to estimations there are in the United States one million potential mothers with syphilis?

That in Iowa, with 45,000 births annually, there are 1,300 to 1,800 syphilitic women delivered of children each year?

That fifteen per cent of chronic heart disease is attributed to syphilis, that fifteen per cent of all organic nervous disease is caused by syphilis, and that general paresis comprises five to eight per cent of all admissions to hospitals for the insane?

That syphilis is responsible for fifteen per cent of all blindness, and that it may affect the kidneys, the stomach and other vital organs?

That more than 500,000 men, women and children in the United States are suffering from syphilis, and that gonorrhea is two to three times as prevalent as syphilis?

That while most cases of venereal disease result from promiscuous sexual intercourse, many people acquire the disease innocently either through marriage or at birth?

That infection not infrequently results from kissing or through the common use of a drinking glass or safety razor?

That the Wassermann and Kahn tests make early diagnosis of syphilis possible, and that it can be cured if treated early and adequately?

That all expectant mothers should have blood tests made as early as the fifth month of their pregnancy and repeated during the eighth month?

That diagnoses should be made and treatment instituted only by a competent physician?

That gonorrhea is often the cause of sterility, and that it may cause inflammation of the joints and heart complications?

That Sweden has set a goal for other countries by actually making venereal disease a rarity in that country?

That this has been accomplished by discouraging diagnosis and treatment by quacks and cultists; by having free diagnostic facilities at hand; by making treatment facilities easily available; by reporting all cases to health authorities; and by respecting all laws for the control of venereal diseases?

That it is essential for your own protection against venereal diseases to have a competent physician examine you adequately at least once a year?

That venereal diseases can be conquered only when the facts about them are known to all of the people, and when the knowledge of these facts is used to prevent the spread of the diseases?

That you should determine what your own state has done in venereal disease prevention?

That both the state and federal departments of health will send you bulletins on the nature, diagnosis and treatment of syphilis and gonorrhea; or that you can probably secure these bulletins from your own public library?

## BOOK NOTES

The following book titles are suggested as being of particular interest to women at large, and of especial interest to doctors' wives whose influence may be felt in so many educational groups.

*Getting Ready to be a Mother* by Carolyn Blarcom and Hazel Corbin is now being presented in its fourth edition and twenty-sixth printing in this country, a fact which should be sufficient evidence of its practical value. Nurses Blarcom and Corbin have both had extensive experience in obstetric nursing and know whereof they speak. They discuss the physiologic, psychologic and financial phases of maternity. They offer suggestions for care of the mother and child during pregnancy and for a year after the child's birth. This volume is an important book which may be recommended without hesitation.

Dr. L. B. Hohman has leaned upon his vast experience as investigator, consultant and practitioner in psychiatry to produce *As the Twig Is Bent* in which he covers most of the problems of child-rearing. Temper, timidity, jealousy, sex, dishonesty, and a host of other traits are analyzed. Dr. Hohman specifically deplores the lack of discipline and constructive work for children and the current tendencies toward too much play and pleasure. Here are some new thoughts on old foundations which bear looking into.

The new edition of *Feeding the Family* by Mary S. Rose is indispensable for the home library. Minerals, vitamins and allergies are now recognized as dominant factors in meal-planning. Menus are included for groups of varying ages; for sedentary workers, elderly people, prospective mothers, convalescent individuals, and simply normal people. An explanation of the digestive system, its functions and methods for avoiding constipation are included.

Faye C. Lewis is an M.D., and so is her husband, but apparently she leads the somewhat usual routine life of the average doctor's wife. In her *Life with Doc* she describes practice in a small Iowa town, practice which could scarcely be called monotonous when everything from a slashed finger to smallpox may appear at the front door. Humor, pathos, gentleness and grim reality are released in the pages of this book which will have sure-fire appeal for doctors' wives.

Mrs. K. M. Chapler

## SPEAKERS BUREAU RADIO SCHEDULE

WSUI—Tuesdays at 1:30 p. m.

WOI—Wednesdays at 2:45 p. m.

Feb. 4-5 Social Hygiene

Clifford W. Losh, M.D.

Feb. 11-12 The Training of an M.D.

Ewen M. MacEwen, M.D.

Feb. 18-19 Indigestion

Herbert W. Rathe, M.D.

Feb. 25-26 The Common Cold

James E. Reeder, Jr., M.D.



## SOCIETY PROCEEDINGS

### Adair County

Officers chosen for 1941 for the Adair County Medical Society at a meeting held Thursday, December 26, in Greenfield, are: Dr. Dale D. Cornell of Greenfield, president; Dr. Ralph E. Wiley of Fontanelle, vice president; Dr. Albert J. Gantz of Greenfield, secretary and treasurer; Dr. Lewis H. Ahrens of Fontanelle, delegate; and Dr. Earl O. Reynolds of Greenfield, alternate delegate.

### Boone County

Dr. James O. Ganoe of Ogden was elected president of the Boone County Medical Society at the annual meeting of that organization held in Boone, Thursday, December 19. Dr. Maurice A. Healy of Boone was named vice president, and Dr. Ben T. Whitaker was re-elected secretary and treasurer.

### Bremer County

The monthly dinner meeting of the Bremer County Medical Society and the staff of St. Joseph's Mercy Hospital was held Monday, January 27, at the Fortner Hotel in Waverly. Following a six-thirty dinner, R. Russell Best, M.D., assistant professor of anatomy and associate professor of surgery, University of Nebraska, College of Medicine, Omaha, delivered an address on Diseases of the Gallbladder.

P. K. Graening, M.D., Secretary.

### Buchanan County

Dr. Robert A. Stewart and Dr. Nelson L. Hersey, both of Independence, were elected president and secretary and treasurer, respectively, of the Buchanan County Medical Society, at a dinner meeting of the society Wednesday, December 18, in Independence.

### Cass County

The Cass County Medical Society met at the Hotel Whitney in Atlantic on Friday, January 17. Following a seven o'clock dinner, Daniel J. Glomset, M.D., of Des Moines, spoke to the members and the Woman's Auxiliary on The Romance of American Medicine. Harvey A. Johnson, M.D., of Atlantic discussed Physical Examination of Selective Service Draftees. The following officers were elected at the business meeting: Dr. Millard T. Petersen, president; Dr. Roscoe M. Needles, secretary and treasurer; and Dr. Emil C. Petersen, delegate. All officers are of Atlantic.

R. M. Needles, M.D., Secretary

### Cerro Gordo County

Newly elected officers of the Cerro Gordo County Medical Society are: Dr. Jay E. Houlahan, president;

Dr. Roger R. Flickinger, vice president; Dr. Ralph E. Smiley, secretary; Dr. Chetwynd M. Franchere, treasurer; Dr. Howard D. Fallows, delegate; and Dr. Harold W. Morgan, alternate delegate. All officers are of Mason City.

### Cherokee County

Dr. Charles F. Obermann, superintendent of the Cherokee State Hospital, was named president of the Cherokee County Medical Society, at a meeting of the society held Tuesday, January 14, at the Sioux Valley Hospital in Cherokee. Other officers include Dr. James H. Wise, vice president and Dr. Donald C. Koser, secretary and treasurer, both of Cherokee.

### Chickasaw County

Officers elected Monday, December 30, to serve the Chickasaw County Medical Society during the year 1941 are: Dr. Nicholas Schilling of New Hampton, president; Dr. Eva Haumeder of New Hampton, secretary and treasurer; Dr. Paul E. Gardner of New Hampton, delegate; and Dr. Arlo L. Murphey of Fredericksburg, alternate delegate.

Eva Haumeder, M.D., Secretary

### Dallas-Guthrie Society

The regular monthly meeting of the Dallas-Guthrie Medical Society was held at the Rotary Club Hall in Adel, Thursday, January 16. After the noon luncheon, the following program was presented: General Practice, Julius M. Margolin, M.D., of Perry; Common Skin Diseases, Harry C. Willett, M.D., of Des Moines; and Lesions of the Cervix, Julian M. Bruner, M.D., also of Des Moines.

S. J. Brown, M.D., Secretary

### Des Moines County

Meeting in regular session at the Hotel Burlington in Burlington, Tuesday, January 14, members of the Des Moines County Medical Society heard an address on The Present Status of Chemotherapy in Pneumonia by Jonathan H. Murray, M.D., of Burlington, and a discussion of Socialized Medicine by George B. Crow, M.D., also of Burlington.

E. P. Russell, M.D., Secretary

### Emmet County

The annual election of officers for the Emmet County Medical Society took place, Thursday, January 9, at the City Hall in Estherville, with the following results: Dr. Matthew T. Morton of Estherville, president; Dr. Luther W. Loving of Estherville, vice president; Dr. Smith C. Kirkegaard of

Ringsted, secretary and treasurer; Dr. Elam E. Lashbrook of Estherville, delegate; and Dr. James B. Knipe of Armstrong, alternate delegate.

#### Greene County

Harold C. Bone, M.D., of Des Moines, furnished the scientific program for the Greene County Medical Society, when that group met Thursday, January 9, at the hospital in Jefferson. Dr. Bone spoke on Cardiovascular Disturbances.

J. R. Black, M.D., Secretary

#### Hancock-Winnebago Society

The present officers of the Hancock-Winnebago Medical Society were re-elected for another year at the annual meeting held Monday, December 30, in Forest City. They are: Dr. Cecil V. Hamilton of Garner, president; Dr. George F. Dolmage of Buffalo Center, secretary and treasurer; Dr. Thomas J. Irish of Forest City, delegate; and Dr. Walter F. Missman of Klemme, alternate delegate.

#### Henry County

Results of the annual election of the Henry County Medical Society, held Friday, December 20, at the Harlan Hotel in Mt. Pleasant, are as follows: Dr. Byron D. Hartley, president; Dr. I. Ziferstein, vice president; and Dr. Samuel W. Huston, secretary and treasurer. All officers are of Mt. Pleasant.

#### Jefferson County

Newly elected officers of the Jefferson County Medical Society are: Dr. Roy G. Swinney of Richland, president; Dr. Roy A. McGuire of Fairfield, vice president; Dr. Harold E. Graber of Fairfield, secretary and treasurer; Dr. James S. Gaumer of Fairfield, delegate; and Dr. Ira N. Crow of Fairfield, alternate delegate.

#### Johnson County

Jacques S. Gottlieb, M.D., of the State Psychopathic Hospital, Iowa City, addressed the Johnson County Medical Society at its regular monthly meeting held Wednesday, January 8, at the Hotel Jefferson in Iowa City. Dr. Gottlieb spoke on The Prognostic Value of Sodium Amytal in Schizophrenia. New officers of the society are: Dr. Francis L. Love, president; Dr. Raphael J. Hennes, vice president; Dr. Adolph L. Sahs, secretary and treasurer; Drs. Ewen M. MacEwen, George C. Albright and Andrew W. Bennett, delegates; and Drs. Milford E. Barnes, William F. Mengert and Sahs, alternate delegates. Dr. Hennes is of Oxford; all other officers are of Iowa City.

A. L. Sahs, M.D., Secretary

#### Linn County

The next meeting of the Linn County Medical Society will be held in Cedar Rapids, Thursday, February 13, when Oscar W. Bethea, M.D., professor

of clinical medicine, Tulane University of Louisiana, School of Medicine, New Orleans, will be the guest of the society, speaking on Bronchiectasis. Discussors will be John H. Peck, M.D., superintendent of Oakdale Sanatorium, John C. Parsons, M.D., of Des Moines, and Richard H. Veldhouse, M.D., of Cedar Rapids. Physicians in surrounding counties are cordially invited to attend.

J. Stuart McQuiston, M.D.,  
Chairman, Program Committee

#### Lucas County

The Lucas County Medical Society entertained more than fifty physicians from surrounding counties at a six o'clock dinner, Friday, December 27, in Chariton. After dinner Clayton J. Lundy, M.D., assistant clinical professor of medicine, Rush Medical College, University of Chicago, gave an interesting and instructive address on Coronary Heart Disease.

G. F. Niblock, M.D., Secretary

#### Madison County

The Madison County Medical Society met Monday, January 20, in Winterset, and Lewis M. Overton, M.D., of Des Moines gave an illustrated lecture on Fractures of the Wrist and Elbow.

Evelyn M. Olson, M.D., Secretary

#### Mitchell County

Members of the Mitchell County Medical Society met Thursday, January 2, at the office of Dr. Ralph L. Whitley in Osage, to celebrate the eightieth anniversary of the founding of the society. A detailed account of the meeting will be found in the History of Medicine section of this Journal. Newly elected officers of the society are: Dr. Merrill O. Eiel of Osage, president; Dr. Joseph C. Westerberger of St. Ansgar, vice president; Dr. George E. Krepelka of Osage, secretary and treasurer; Dr. Thomas S. Walker of Riceville, delegate; and Dr. Theodore E. Blong of Stacyville, alternate delegate.

G. E. Krepelka, M.D., Secretary

#### Osceola County

The Osceola County Medical Society, holding its annual meeting Monday, December 30, at the Court House in Sibley, elected officers for 1941 as follows: Dr. Frank Reinsch of Ashton, president; Dr. Louis H. Heetland of Sibley, vice president; Dr. Frank P. Winkler of Sibley, secretary and treasurer; Dr. Harold W. Schoon of Sibley, delegate; and Dr. Calvin C. F. Bosch of Melvin, alternate delegate.

#### Page County

The following officers were elected for 1941 at a meeting of the Page County Medical Society, at the Hand Hospital in Shenandoah on Wednesday, January 15: Dr. Benjamin S. Barnes of Shenandoah, president; Dr. Erwin J. Gottsch of Shenandoah, vice president; Dr. Norman M. Johnson of Clarinda, sec-



retary and treasurer; Dr. Frank H. Clark of Clarinda, delegate; and Dr. Wayland H. Maloy of Shenandoah, alternate delegate.

F. H. Clark, M.D., Secretary

#### Polk County

Dr. Daniel J. Glomset assumed the presidency of the Polk County Medical Society and Des Moines Academy of Medicine, at the annual meeting held Wednesday, January 15, at the Des Moines Club. Officers elected to serve during 1941 are: Dr. James E. Dyson, president elect; Dr. Donald H. Kast, secretary and treasurer; and Drs. Walter E. Baker, James A. Downing, Olin A. Elliott, Lee Forrest Hill and Joseph B. Priestley, delegates.

#### Poweshiek County

Newly elected officers of the Poweshiek County Medical Society are: Dr. Theodore V. Niemann of Brooklyn, president; Dr. John R. Parish of Grinnell, vice president; Dr. Clinton E. Harris of Grinnell, secretary; and Dr. John T. Padgham of Grinnell, treasurer.

#### Sac County

The regular monthly meeting of the Sac County Medical Society was held at the Park Hotel in Sac City, Thursday, January 9. Charles H. Coughlan, M.D., of Fort Dodge, presented the main portion of the scientific program, speaking on Ocular Symptoms. His talk prompted much pertinent discussion. A case presentation of chronic appendicitis by George H. Bassett, M.D., of Sac City, completed the program.

W. I. Evans, M.D., Secretary

#### Scott County

Horace M. Korn, M.D., professor of theory and practice, State University of Iowa, College of Medicine, Iowa City, was guest speaker for the Scott County Medical Society, Tuesday, January 7, at the Lend-A-Hand Club in Davenport. Dr. Korn spoke on Hypertension and the Newer Methods of Treatment.

J. H. Sunderbruch, M.D., Secretary

#### Tama County

The annual meeting of the Tama County Medical Society was held in Tama Friday, December 27, with the following results: Dr. Ira D. Nelson of Toledo, president; Dr. Knight E. Fee of Toledo, vice president; Dr. A. J. Havlik of Tama, secretary and treasurer; Dr. Charles W. Maplethorpe of Toledo, delegate; and Dr. Gilbert T. McDowall of Gladbrook, alternate delegate.

#### Webster County

Officers elected at the annual meeting of the Webster County Medical Society held in Fort Dodge, Saturday, December 21, are: Dr. Albert E. Acher

of Fort Dodge, president; Dr. Gates M. Brown of Dayton, vice president; Dr. Paul C. Otto of Fort Dodge, secretary and treasurer; Dr. Albert A. Schultz of Fort Dodge, delegate; and Dr. Edgar N. Zinn of Fort Dodge, alternate delegate.

#### Winneshiek County

J. Carl Painter, M.D., superintendent of Sunny Crest Sanatorium in Dubuque, presented a paper on Diagnosis of Pulmonary Tuberculosis, illustrated with lantern slides, for members of the Winneshiek County Medical Society at the annual meeting of that organization held in Decorah, Tuesday, December 10. The election of officers resulted as follows: Dr. Leo C. Kuhn of Decorah, president; Dr. John G. Goggin of Ossian, vice president; Dr. Leonard J. Hospodarsky of Ridgeway, secretary and treasurer; Dr. Arthur F. Fritchen of Decorah, delegate; and Dr. Goggin, alternate delegate.

L. J. Hospodarsky, M.D., Secretary

#### Woodbury County

James F. Kelly, M.D., professor of radiology and physiotherapy, Creighton University School of Medicine, Omaha, spoke on The Prevention and Treatment of Certain Inflammatory Conditions in X-Ray Therapy, for members of the Woodbury County Medical Society, Thursday, January 16, at the Martin Hotel in Sioux City. The program followed a six-thirty dinner.

W. K. Hicks, M.D., Secretary

### PERSONAL MENTION

Dr. Channing E. Wolfe of Coon Rapids has retired after thirty-four years of active practice. Dr. Donald L. Cross is locating in Dr. Wolfe's office, coming from Syracuse, New York, where has been resident physician at the Syracuse University Medical Center. Dr. Cross was graduated in 1934 from the University of Louisville, School of Medicine.

Dr. Eugene Van Epps of Clinton, was the noon luncheon speaker for the Clinton Rotary Club at the meeting held Monday, January 13, at the LaFayette Hotel in Clinton. His subject was "Pediatrics, What It Is, What It Does, and Why I Entered This Field".

Dr. Byron M. Biersborn of State Center has announced the association of Dr. W. P. Pelz with him in the practice of medicine. Dr. Pelz was graduated from the University of Berne, Switzerland, and for the past two years has been connected with the Iowa Methodist Hospital in Des Moines.

Dr. James E. Dyson of Des Moines addressed the South Ward Parent-Teachers Association in Winterset, Monday, January 13. He presented and discussed the Mead Johnson film entitled "When Bobby Goes To School".

**Dr. Jessie B. Hudson**, who has practiced for the past five years in Sheffield, has moved to Hampton, where she will continue in the practice of medicine.

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**Dr. Philip C. Jeans**, professor of pediatrics, State University of Iowa, College of Medicine, Iowa City, was guest speaker for the Rock Island County Medical Society, at a meeting held in Moline, Illinois, Tuesday, January 14. He spoke on "Certain Aspects of the Nutrition of the Child".

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**Dr. William F. Skelley** of Davenport has announced his retirement from active medical practice, after forty-six years in the profession.

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**Dr. Paul F. Chesnut** has located in Winterset where he will be associated with Dr. C. B. Hickenlooper. Dr. Chesnut was graduated in 1939 from the State University of Iowa, College of Medicine, Iowa City, and served his internship at Broadlawns Hospital in Des Moines.

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**Dr. Fred A. Bowman** of Leon was guest speaker for the Leon Rotary Club, Monday, January 13, discussing the subject of "Pneumonia".

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**Dr. Guido J. Sartor**, son of Dr. Pierre Sartor of Titonka, has located in Mason City, where he will be associated with the Park Hospital Clinic as pediatrician. Dr. Sartor was graduated in 1936 from the State University of Iowa, College of Medicine, Iowa City, and after a year's internship there, entered the University of Chicago for special work in pediatrics. He has been connected with the University of Chicago Clinics for the past two years.

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**Dr. James A. Mueller** of Fenton spoke on "Preventive Medicine" for members of the Seneca Parent-Teachers Association, at the regular monthly session in the Seneca School, Thursday, January 9.

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**Dr. Egmont H. Barg**, who has been a member of the faculty of the State University of Iowa, College of Medicine, Iowa City, for the past four years, has joined the staff of the Hampton Clinic as surgeon. He will take the place of Dr. Joseph M. Burger who is leaving to take special work in Chicago.

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**Dr. Erwin C. Sage** of Burlington, director of the Des Moines County Public Health Unit, spoke for the League of Women Voters in Burlington, Thursday, January 16 on "Public Health Problems".

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**Dr. Sylvester W. Barnett** of Cedar Falls announces the association of Dr. Charles N. Hoyt with him in the practice of medicine. Dr. Hoyt was graduated in 1938 from the University of Michigan Medical School, Ann Arbor, and has served a two years' internship at St. Luke's Hospital in Chicago.

**Dr. Frederick C. Lowry**, recently of the Brooklyn Cancer Institute in Brooklyn, New York, has arrived in Centerville, where he will be associated with Drs. Elbert E. Heaton and Elmer A. Larsen. Dr. Lowry was graduated in 1937 from the State University of Iowa, College of Medicine, Iowa City, and served his internship at Harper Hospital in Detroit and Kings County Hospital in Brooklyn.

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### MARRIAGES

**Kathleen Goddard**, daughter of Mrs. E. A. Howes of Edmonton, Alberta, Canada, and Dr. John W. Caldwell of Des Moines, were married Thursday, December 19, at the Little Brown Church in Nashua. After a short wedding trip the young couple returned to Des Moines, where Dr. Caldwell has been associated with Dr. Edwin B. Winnett for the past two and one-half years.

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**Miss Patricia Ellen Noonon** of Council Bluffs and Dr. John Philip Cogley, also of Council Bluffs, were married Wednesday, December 25, in Palm Springs, California. They will live in Council Bluffs where Dr. Cogley has been engaged in the practice of medicine for several years.

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The marriage of **Miss Agnes Marie Weyers** of Des Moines and Dr. John D. Conner of Nevada took place Wednesday, December 25, at the Central Presbyterian Church in Des Moines. The bride is a graduate of the Iowa Methodist Hospital School of Nursing, and Dr. Conner was graduated from the State University of Iowa, College of Medicine, Iowa City. He has been associated with his father, Dr. Frank H. Conner, in the practice of medicine for the past year.

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**Miss Lois Hooper**, daughter of Mr. and Mrs. Carl Hooper of Hartford, and Dr. Emil A. Fullgrabe of Indianola, were united in marriage Tuesday, December 24, at the Presbyterian Manse in Indianola. They will make their home in Indianola, where Dr. Fullgrabe has been associated with Dr. Lester E. Hooper since July, 1939.

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The wedding of **Miss Alice Miriam Hughes**, daughter of Professor H. D. Hughes of Ames, and Dr. W. Hugh Missildine, son of Mr. and Mrs. Carl Missildine of Des Moines, took place Tuesday, December 24, in the Collegiate Presbyterian Church in Ames. After a two weeks' wedding trip they returned to Eagle Grove, where Dr. Missildine has just entered the practice of medicine.

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**Miss Mary Considine**, director of the department of public assistance, Cherokee, was married to Dr. Adolph Soucek, also of Cherokee, Saturday, December 28, in the Lutheran Church in Marcus. The young couple will live in Cherokee, where Dr. Soucek is assistant superintendent of the State Hospital.



# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. TOM B. THROCKMORTON, Des Moines

DR. JOHN T. MCCLINTOCK, Iowa City

DR. WALTER L. BIERRING, Des Moines

DR. R. T. LENAGHAN, Clinton

DR. HENRY G. LANGWORTHY, Dubuque

## The History of Medicine in Buchanan County

F. F. AGNEW, M.D., and

A. G. SHELLITO, M.D., Independence

(Concluded from last month)

A number of men who practiced for a time in this county, doing their share of good for humanity and active in organized medicine, moved to other locations to carry on their work. So far as can be learned, the following are living and the majority of them are still in active practice:

Martin J. Joynt, formerly of Jesup, now of Le-Mars.

J. E. Ridenour, formerly of Jesup, now of Waterloo.

G. V. Murphy, formerly of Winthrop, now of Waterloo.

George W. Tapper, formerly of Rowley, now of Monona.

J. T. Grayston, formerly of Hazleton, now of Cedar Rapids.

W. C. Miller, formerly of Independence, now in California, probably retired.

Charles H. Nimms, formerly of Independence, now of Hot Springs, Arkansas, retired.

Evalin Peo, formerly of Hazleton, now of Santa Ana, California, retired.

J. C. Ohlmacher, formerly of Independence, now of Vermillion, South Dakota.

Paul E. Gardner, formerly of Hazleton, always prominent in organized medicine and a very popular, well known man, now of New Hampton.

For many years Buchanan county has borne a very fine record for excellence in medical and surgical progress, and each of the above men has done his part to make it so in the locality in which he practiced and during the time when the present day advantages were unavailable. Theirs were indeed lives of service and sacrifice and the welfare of their patients took precedence over all other things.

Medical history in Buchanan county is still

in the making and each year records its advances. No group of men could be more aggressive in action, more harmonious in spirit, and more earnest in thought than are the members of this society, and the excellent results obtained are the answer to their untiring effort to accomplish the best possible.

The present membership is as follows:

Hazleton:

Rudolph A. Selo.

Fairbank:

Loraine W. Ward.

Aurora:

John F. Loeck.

Winthrop:

H. A. Householder.

Brandon:

Frank Senska.

Jesup:

R. L. Knipfer and G. N. Thompson.

Independence:

Reta Adams

Fred F. Agnew

J. W. Barrett

George Boody

Helen Brockman

J. W. Donnell

Nelson L. Hersey

Paul J. Leehey

M. C. Melrose

J. H. McGready

James Mooney

Bert B. Sells

A. G. Shellito

Robert A. Stewart

Charles W. Tidball.

## THE PEOPLES HOSPITAL

After many years of unsatisfactory effort in providing care for the sick and injured in the homes and boarding hospitals by the individual physicians, the Buchanan County Medical Society, at a special meeting, discussed the hospital problem and voted to sponsor a drive for the purpose of raising funds to build a hospital suitable for the needs of this community. Consequently a large part of the county was canvassed and the sentiment found to be favorable.

Articles of incorporation had been drawn preparatory to calling a mass meeting. At this meeting there was a liberal discussion of the project. The articles were adopted and eleven trustees were selected from the incorporators. Immediately this body of trustees organized and went into action. Under the direction of an expert solicitor a campaign was staged in the fall of 1916 and the required money was raised. An improved tract of eight lots was purchased on which was located a sizable brick residence. Plans for building were made at once, but a declaration of war caused the progress to be held up until 1920 when a twenty-bed institution was erected. In the meantime the old building had been furnished and equipped as a hospital and was so used until the new one was made ready for occupancy.

In 1930 Miss Mary Abella McKenzie and her brother made a donation of \$15,000.00 for the purpose of building an addition to be used for convalescents and children. In this addition there is an isolated baby ward equipped with bassinets and an incubator, baby bath and storage for baby clothes. Adjoining is a completely equipped delivery room and rooms for the mothers. Recently, the American Legion sponsored a drive to raise funds for a respirator. This has been accomplished and the respirator will be placed in the isolation building which is a unit separated from the main building and used solely for isolation cases.

The hospital is managed by a board of eleven trustees, one lady, five physicians and five business men. The institution, from the time of organization, has been self-supporting and has never had a debt. There is an efficient, active Ladies Auxiliary whose activities in behalf of the hospital are most helpful and appreciated. The hospital has a well organized staff composed of the members of the Buchanan County Medical Society among whom fairness and cooperation prevail to the utmost. The nursing staff is composed entirely of registered nurses whose demeanor is pleasing and whose aim is excellence of service to patients.

From this hospital, none are turned away, while the poor and the well-to-do receive the same care and attention. The mortality rate has been maintained at a very low level. All relief cases are cared for on a cost basis through a contract with the Board of Supervisors. We have reason to be proud of this institution, and we are.

## MITCHELL COUNTY ANNIVERSARY MEETING

In commemoration of the eightieth anniversary of the Mitchell County Medical Society, the present members were royally entertained on Thursday, January 2, by Dr. Ralph L. Whitley of Osage.

Dr. Whitley is a grandson of Dr. Sumner B. Chase at whose office the society was organized on January 2, 1861. The physicians present on this memorable occasion were Drs. Sumner B. Chase, R. W. Poindexter, D. G. Frisbie, R. A. Barnes and A. H. Moore. Dr. Benjamin Rolfe was absent. The original articles of organization and a fee table, subsequently drafted and adopted as a result of this meeting, and printed by Hutchins and Todd of Des Moines in 1861, now constitute one of the valued possessions of Dr. Whitley. It is interesting to note that in 1861 the fee of five to fifteen dollars, designated for the treatment of gonorrhea and syphilis, was payable *in advance*. Taking into consideration the recent devaluation of currency in terms of gold, the original fees as drafted are not greatly in variance with those of the present day.

Following adjournment of the business meeting, the majority of the members present participated in the usual game of "Rohlf" bridge, wherein the worthy son of a minister was finally presented with a suitable award for his psychological ability in having mastered the art of palmistry.

G. E. Krepelka, M.D., Secretary

## FROM THE PAGES OF HISTORY

"Two contrary laws seem to be wrestling with each other nowadays; the one a law of blood and of death, ever imagining new means of destruction and forcing nations to be constantly ready for the battlefield; the other, a law of peace, work and health, ever evolving new means of delivering man from the scourges which beset him. The one seeks violent conquests; the other, the relief of humanity. The latter places one human life above any victory, while the former would sacrifice hundreds of thousands of lives to the ambition of one. The law of which we are the instruments seeks, even in the midst of carnage, to cure the sanguinary ills of the law of war; the treatment inspired by our antiseptic methods may preserve thousands of soldiers. Which of these two laws will ultimately prevail, God alone knows; but we may assert that science will have tried, by obeying the law of humanity, to extend the frontiers of life."—Louis Pasteur



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

- THE FOOT AND ANKLE**—By Philip Lewin, M.D., associate professor of bone and joint surgery, Northwestern University Medical School. Lea and Febiger, Philadelphia, 1940. Price, \$9.00.
- PRINCIPLES OF HEMATOLOGY**—By Russell L. Haden, M.D., The Cleveland Clinic. Second edition, thoroughly revised. Lea and Febiger, Philadelphia, 1940. Price, \$4.50.
- ARTHRITIS AND ALLIED CONDITIONS**—By Bernard I. Comroe, M.D., instructor in medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1940. Price, \$3.50.
- MODERN DERMATOLOGY AND SYPHILOLOGY**—By S. William Becker, M.D., associate professor of dermatology and syphilology; and Maximillian E. Obermayer, M.D., assistant professor of dermatology and syphilology, University of Chicago. J. B. Lippincott Company, Philadelphia, 1940. Price, \$12.00.
- GETTING READY TO BE A MOTHER**—By Carolyn Conant van Blarcom. Fourth edition. The Macmillan Company, New York, 1940. Price, \$2.50.
- OBSTETRICS AND GYNECOLOGY**—Edited by Fred L. Adair, professor of obstetrics and gynecology, University of Chicago. Two volume illustrated set. Lea and Febiger, Philadelphia, 1940. Price, \$20.00.
- THE INJURED BACK AND ITS TREATMENT**—Edited by John D. Ellis, M.D., Chicago. Charles C. Thomas, Springfield, 1940. Price, \$5.50.
- PHYSICAL DIAGNOSIS**—By Ralph H. Major, M.D., professor of medicine, University of Kansas. Second edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price, \$5.00.
- THE NEW INTERNATIONAL CLINICS, Volume III, New Series Three**—Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1940.
- PHYSICAL DIAGNOSIS**—By William Nance Anderson, M.D., associate clinical professor of medicine, University of Southern California, School of Medicine, Los Angeles. Lea and Febiger, Philadelphia, 1940. Price, \$4.75.
- MEDICAL NURSING**—By Edgar Hull, M.D., clinical professor of medicine, Louisiana State University School of Medicine, New Orleans. F. A. Davis Company, Philadelphia, 1940. Price, \$3.50.
- APPLIED PHARMACOLOGY**—By Hugh Alistair McGuigan, M.D., professor of pharmacology and therapeutics, University of Illinois, College of Medicine. Illustrated. The C. V. Mosby Company, St. Louis, 1940. Price, \$9.00.
- OBSTETRICS IN GENERAL PRACTICE**—By J. P. Greenhill, M.D., professor of obstetrics and gynecology, Loyola University Medical School. The Year Book Publishers, Chicago, 1940. Price, \$3.50.
- OFFICE UROLOGY**—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1940. Price, \$10.00.

## BOOK REVIEWS

### PRINCIPLES OF HEMATOLOGY

By Russell L. Haden, M.D., chief of the medical division, The Cleveland Clinic. Second edition thoroughly revised. Lea and Febiger, Philadelphia, 1940. Price, \$4.50.

This book, by the well known hematologist, Dr. Haden, is a simple, concise review of the principles of hematology. It differs from the usual text in the manner of presentation of the subject. The normal anatomy and physiology of the hemopoietic system are well outlined, and disorders of the blood are considered as disturbances in the normal physiology of its constituents. As aids in the explanation of abnormal physiology, the author uses many diagrams and graphs to simplify the subject matter. Many short case histories are used to illustrate the various disorders, and appropriate treatment is usually discussed.

The text is illustrated with 173 original photomicrographs which serve to help the physician identify the various blood pictures. There is an excellent chapter on detailed technic of the more simple laboratory procedures. This is especially recommended, since the first step in any blood examination must of necessity be the proper preparation of material. The more complicated technics of supravital staining and bone marrow study are purposely omitted, these being in the realm of the trained hematologist.

The blood disorders are classified into the clinical groups in which they occur. The classification of the anemias is on a clinical and physiologic basis, as well as morphologic. Differential diagnosis is well discussed. The leukemias are studied and considerable space is devoted to the hemorrhagic states.

The differential diagnosis of blood disorders in relation to splenomegaly is well presented.

The reviewer was impressed with the way in which this work is presented from the clinical point of view. Confusion is lessened by the intentional omission of some of the more rare and atypical types of blood disorders. For the physician who wishes a concise, modern approach to the principles of clinical hematology, this book is recommended. A. L. J.

### MODERN DERMATOLOGY and SYPHILOLOGY

By S. William Becker, M.D., associate professor of dermatology and syphilology; and Maximillian E. Obermayer, M.D., assistant professor of dermatology and syphilology, University of Chicago. J. B. Lippincott Company, Philadelphia, 1940. Price, \$12.00.

Despite the fact that there are many new texts on dermatology and syphilology, most of which are excellent, the recent work of Becker and Obermayer commands a place with the best.

While there is little new in the subject matter itself, the manner of presentation is decidedly new and pleasingly different. The authors have presented the different diseases in the lecture style rather than in the encyclopedic style. Explanatory material has been introduced at the beginning of each chapter under the title "Orientation" in the intimate language of teacher-to-student and the whole of the text is written in a less stilted and more informal manner.

Since one of the authors is a staunch defender of the functional origin of many diseases we expect to find considerable space devoted to so-called functional dermatoses. In the chapter on syphilis, diag-

nosis and treatment of this disease are excellently handled, and a very useful outline for diagnosis and treatment of all phases of syphilis is given.

The text is well illustrated with photographs and photomicrographs, many of which are in color. Dermatoses infrequently encountered, such as tropical diseases, are not included. The term modern in the title is well applied and the text will be found a very useful reference for the dermatologist and the general practitioner alike.

J. W. Y.

#### THE NEW INTERNATIONAL CLINICS

Volume III, New Series Three. Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1940.

This volume of the New International Clinics consists of nine original contributions of a varied nature, twelve clinics by members of the faculty of Cornell University, edited by Russell L. Cecil, and a review of recent progress in obstetric analgesia by Hellman of Johns Hopkins University.

The Pathology of Urogenital Tuberculosis by Auerbach of the Sea View Hospital records the author's experience in 1,143 consecutive tuberculous autopsies with 127 cases of urogenital tuberculosis. There were 56 cases of renal tuberculosis (4.9 per cent), but the disease was unilateral in 41 cases. Tuberculosis of the ureter occurred in practically all cases with renal involvement. Tuberculosis of the bladder was encountered in 50 cases. In 748 consecutive male autopsies there were 105 cases of genital tuberculosis (14.4 per cent).

J. W. Cutler presents a new method of determining the sedimentation rate by the use of the Cutler tube of 50 millimeter length and five millimeter internal diameter. The observations are recorded in charts; the biggest drop in any five-minute period during the first half hour is the maximum sedimentation rate, and this is used as the unit of comparison. A maximum settling of one millimeter or less in five minutes during the first half hour is normal.

George J. Heuer reviews the experience with 1,142 patients with gallbladder disease at the New York Hospital. Of this group, 684 or 60 per cent had chronic cholecystitis, 267 or 23.5 per cent developed acute cholecystitis, 151 or 13.2 per cent developed stones in the common duct, and 40 or 3.5 per cent developed cancer of the biliary tract. In the management of this condition, early diagnosis and early surgical treatment while the disease is confined to the gallbladder, result in a very low mortality rate. The use of Vitamin K has eliminated the hazard of postoperative hemorrhage in the jaundiced patient.

Plummer and Liebmann report on the combined serum and sulfapyridine therapy of pneumococcus bacteremia. It is pointed out that bacteremia persisting after adequate sulfapyridine therapy is usually due to a focus such as a vegetative endocarditis. Douglas illustrates the use of sulfanilamide in obstetric and gynecologic practice by numerous case reports.

The critical review of obstetric analgesia presents an argument for the wise use of analgesia by competently trained obstetricians. Statistics indicate it is a factor in the lowering of difficult operative deliveries and results in decreased maternal and infant mortality rates.

D. K.

#### THE FOOT AND ANKLE

By Philip Lewin, M.D., associate professor of bone and joint surgery, Northwestern University Medical School. Lea and Febiger, Philadelphia, 1940. Price, \$9.00.

This book is very well prepared, completely covering all the conditions arising in foot disabilities, diseases or injuries.

The volume begins with the embryologic development and anatomic considerations of the foot, the basic principles of foot and ankle disturbances along with the basic principles of treatment of the foot and ankle. Following this the author discusses congenital defects and deformities along with static defects and deformities. Various affections of the toes such as bunions, hammer toes, trigger toes and painful heels are taken up in detail. One chapter is devoted to the discussion of the disturbances of the epiphyses of the ankle, exostosis and accessory bones; affections of muscles, tendons, muscle fascia and bursa of the foot and ankle are completely presented.

A very excellent chapter on fractures and dislocations of the bones of the foot and ankle has been taken up in detail as to cause, treatment and the after-care. The various infections of the foot and ankle, such as osteomyelitis, gas gangrene, trench foot, tuberculosis, arthritis and various skin involvements are discussed. Both the infantile and the spastic types of paralysis, their care, both non-operative and operative, are presented in detail. Circulatory disturbances, such as arteriosclerosis, along with all of the syndromes that go with circulatory lesions, are discussed. Gangrene which follows both circulatory and diabetic conditions is taken up both from a conservative and amputation viewpoint. The after-care of amputations receives due consideration. Tumors of the foot, dermatologic affections, ingrown toenails and other nail abnormalities and foot hygiene are considered.

All of the above named subjects are discussed in detail and the above outline is given only with the idea of showing the complete nature of the book.

Since this is such a complete coverage of the foot and ankle and is written in such clear detail with numerous diagrams, cuts and illustrations, the book can be readily recommended not only to the specialist but also to the general practitioner and the medical student. This is one of the best books written on this subject. The author certainly has summarized and put in one volume a tremendous amount of material which would have to be gleaned from an innumerable quantity of journals. It is a volume which any doctor could well use in his library.

D. C. W.



# The JOURNAL

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No. 3

### COMMON ERRORS IN THE DIAGNOSIS AND TREATMENT OF ANORECTAL DISEASES\*

RAYMOND J. JACKMAN, M.D.,  
Section on Proctology,  
Mayo Clinic, Rochester, Minnesota

Most diagnostic errors in anorectal diseases are those referable to omission; that is, failure of the physician to carry out simple digital examination of the rectum which should be a part of every physical examination. A proctoscopic examination should be carried out when anything abnormal is found on digital examination, or when the patient has any symptoms referable to this region. Buie<sup>1</sup> found that one out of every four patients who came to the Mayo Clinic suffering from carcinoma of the terminal portion of the colon had received treatment for some other supposed rectal condition during the period of his chief complaint, the carcinoma remaining undiscovered. The majority of these errors would have been obviated if digital examination of the rectum had not been omitted when the patient first presented himself. Most carcinomas of the terminal portion of the colon are within reach of the examining finger.

Diagnosis and treatment are too closely linked to be separated. Proper treatment depends on correct diagnosis, but in addition to the mistakes which may arise from an incorrect diagnosis, some of the mistakes made in treatment are errors of commission, due principally to failure of the physician either to understand the anatomic aspects of the region concerned, or to apply the knowledge of it which he has.

#### COMMON RECTAL CONDITIONS

*Ectropion of the rectal mucosa.* This is a commonly encountered type of deformity which occurs after a procedure that is thought to be the

Whitehead operation for removal of hemorrhoids by excision, but actually is not the operation Whitehead described. In this erroneous operation the rectal mucosa has been sutured to the skin outside the grasp of the anal musculature. Consequently, the mucosa is exposed to the exterior and since it is composed of a columnar type of glandular epithelium, it continues to secrete mucus. Therefore, the patient who has undergone this operation will complain of discharge and moisture in the region. Because of the constant presence of moisture, the adjacent perianal skin will become excoriated and infected, giving rise to symptoms of burning and itching. The ectropion may be annular or may be present only in segments. Unless the physician is familiar with the appearance of the condition, it can be and frequently is mistakenly diagnosed, and is treated as anal ulceration or anal fissure. In contrast to the adjacent skin, the mucosa appears bright red and bleeds more readily than normal and thus causes confusion if care is not exercised. It is not an uncommon thing to encounter a patient suffering from ectropion of the rectal mucosa who has been treated by application of various cauterizing agents to the exposed mucosal surface under the physician's false impression that he was dealing with a fissure. The only satisfactory treatment for the condition is surgical; which is to say, dissection of the exposed mucosa and restoration of it to the normal anatomic position inside the anal musculature.

The basic cause of ectropion of the rectal mucosa may be said to lie in a faulty conception of the anatomic aspects of the anorectal region. The anal canal is from one to three centimeters in length. The inner boundary of the anal canal is a definite landmark; it is the pectinate line or dentate margin, and it marks the point of dissolution of the anal plate between the hindgut and proctodeum. In this particular region an abrupt transition from skin to mucous membrane occurs. In the normal anal canal the dentate margin is situated well inside the external sphincter muscle, and

\*Presented before the Bremer County Medical Society, Waverly, Iowa, September 23, 1940.

in the performance of any type of rectal operation it must be maintained there, or ectropion of the mucosa will result.

*Anal fistula.* All anal fistulas originate at the dentate margin in the crypts of Morgagni. Because of the sequence of the events which occur in the formation of a fistula, Buie has designated the dentate margin as the "primary source" of a fistula and the external opening as the "secondary opening." If the primary source of the fistula is sufficiently large, so that drainage through it is not impeded, a secondary opening does not occur and the fistula is spoken of as being "incomplete." The only satisfactory treatment of the condition is surgical, the aim of which is to convert all fistulous tunnels into open ditches, so to speak; or to state it differently, after a probe has been inserted from the primary source and out through the secondary opening, all tissue overlying or external to the probe must be incised, and debridement of the margins of the resultant wound must be done. This is true, whether or not muscle intervenes. It is not uncommon to observe a patient who has been operated on unsuccessfully many times for a fistula. On examination of the region the wound or scars resulting from previous surgical treatment will have been found to approach the anal margin. The surgeon, fearing that his patient would suffer from anal incontinence if the incision involved the muscle, stopped short of completing the operation. Parenthetically it might be stated that anal incontinence is more often the result of inadequately performed surgical operation and improper postoperative care than it is the result of completed fistulectomy in which part or all of the anal musculature has been severed once or several times.

*Rectal bleeding.* One of the most common rectal complaints which will cause a patient to consult his physician is bleeding. It is too frequently assumed that the bleeding is hemorrhoidal in origin, and treatment is instituted accordingly. The following report of a case serves well to illustrate this statement.

A woman, forty-four years of age, registered at the Mayo Clinic in May of 1939. Her chief concern was rectal bleeding of two years' duration. She had consulted her physician one and one-half years previous to her coming to the clinic for the same symptom. During the two months ensuing after her visit to her physician she had received twenty-three injections of some type of sclerosing agent for internal hemorrhoids, but the bleeding had persisted. Several months of ingestion of a special diet and various drug and vaccine therapies for colitis had not produced any change in symptoms. Results of the general physical and laboratory examinations were essentially negative. On proctoscopic

examination a pedunculated polyp about 2.5 by 2.5 centimeters in size was found. It was destroyed by fulguration and the bleeding promptly subsided. Results of subsequent roentgenologic studies of the colon were negative.

It is true that in most instances bright red blood passed from the rectum flows from internal hemorrhoids. It is incorrect, however, to assume that this is always the case. It is far better to assume that it is always caused by a malignant process or by some other pathologic process of the bowel until it has been proved otherwise.

*Hypertrophied anal papillae and polyps.* Hypertrophy of the anal papillae is the result of an inflammatory process; any infection in the anal canal or crypts usually will cause papillary hypertrophy. The infection results in edema of the papilla, and after the process has subsided complete recession of the papilla to its normal size will rarely occur. The differentiation of a hypertrophied anal papilla from a polyp should offer the physician little difficulty, but the two conditions are frequently confused. If the relationship which the mass bears to the pectinate line is carefully noted on examination, differential diagnosis will be simplified. Since the hypertrophied papilla is part of the anal canal or rather, part of the dentate margin, it is covered by stratified squamous epithelium and therefore is the same color as the skin. This is easily distinguished grossly from the adjacent red rectal mucosa. Polyps usually arise above the dentate margin from the columnar epithelium, and when they so arise present a typical adenomatous or polypoid appearance, are more friable and bleed easily. It is important to distinguish between these two conditions, principally because the potentiality of the one is vastly different from that of the other. The malignant propensities of the polyp are well known, whereas, on the other hand, hypertrophied papillae cause trouble only to the extent that they cause such symptoms as protrusion, sensation of rectal fullness, pressure or pain.

The treatment of the two conditions is wholly different. Because of the fact that that part of the bowel above the dentate margin has an autonomic nerve supply, most small sessile and pedunculated polyps in this region can be destroyed very simply by fulguration without resort to anesthesia. On the other hand, the anal canal and dentate margin (from which enlarged papillae arise) have a somatic sensory supply from the sacral plexus and are very sensitive. Thus, any attempt at removal of enlarged papillae will require the production of some form of anesthesia.

*Rectal tumors of chemical origin.* This type of tumor results from the use of various sclerosing preparations in the injection treatment of internal



hemorrhoids. When the injected agent has an oil base, particularly mineral oil, the resultant fibrous tumor may persist for many years and present itself as a single nodular mass or an annular stricture. It is not uncommonly confused with a malignant tumor in this region. Several instances have been reported in which the condition has been mistaken for a carcinoma, and the patient either has undergone colostomy, or some type of radical operation has been performed to remove the supposedly malignant tumor. The most important feature distinguishing such a tumor from a malignant tumor is the patient's report that he or she has received injection treatments. The overlying mucosa is usually normal, although it may be scarred and adherent. The condition also may be confused with a chronic internal abscess or fistula, and examination with the patient under the influence of anesthesia may be necessary to rule out this possibility.

*Rectal shelf.* An extrarectal mass situated in the pouch of Douglas or rectovesical space, resulting from metastasis from a carcinoma in the upper part of the abdomen, or some intra-abdominal inflammatory disease, may impinge on the anterior rectal wall and produce a mass which not uncommonly is confused with primary rectal carcinoma. In such cases, the patient's principal complaint may be referable to the rectum, and the finding of the rectal shelf may be the first significant clue to discovery of some obscure abdominal disease.

#### CONCLUSIONS

In all fields of medicine and surgery various authorities will differ as to the value of certain features of diagnosis and treatment. Some procedures are more or less orthodox; others are controversial matters. In anorectal diseases most diagnostic errors are not so much the results of mistaken identity as they are the results of failure of the physician to examine the patient. Most therapeutic failures are referable to the physician's faulty conception of anatomic and physiologic aspects of the anorectal region.

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## THE VARIABILITY OF EMBOLIC PHENOMENA IN SUBACUTE BACTERIAL ENDOCARDITIS

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The cases included in the following study were seen at the State University of Iowa General Hospital throughout the fifteen years preceding 1940 during which period the diagnosis of subacute bacterial endocarditis was made 130 times. However, in only eighty instances does examination of the clinical or postmortem record reveal evidence upon which such a diagnosis might rest, and this in itself points toward the difficulty that sometimes was encountered in recognition of the disorder. Many factors may have played some part in this but one of the most prominent was the diversity of the signs and symptoms among the patients admitted to the hospital suffering from this illness. Many constituted diagnostic problems because the clinical picture departed considerably from that commonly encountered. Puzzling as these manifestations were at first they could be seen finally to be nothing really different but rather an extraordinary result of the same fundamental pathologic process.

Three points are considered essential in the diagnosis of subacute bacterial endocarditis: the history of an antecedent endocardial lesion or its discovery by physical examination; the signs of infection; and the presence of embolic phenomena. When, in addition, the presence of *Streptococcus viridans* in the blood stream is demonstrated, no doubt remains.

#### THE ANTECEDENT LESION

The concept is generally held that subacute bacterial endocarditis arises on defective areas of the endocardium, the abnormality being either congenital or more commonly the result of some foregoing illness. It has been repeatedly shown that the majority are the result of infection and more particularly of rheumatic carditis. Middleton and Burke<sup>1</sup> in the analysis of their cases reported that in 81.6 per cent there was a preceding illness of the rheumatic group. In our own series 57 or 71.2 per cent had rheumatic valvulitis as shown by a history of rheumatic fever, a valvular lesion discovered by physical examination, or scarring demonstrated at necropsy. Two other patients presented a history of recurrent tonsillitis, one of scarlet fever, and another of diphtheria after which the family physician discovered a cardiac murmur not present before the illness. Thus there was a known infection at least capable

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of producing an endocardial defect in 76.2 per cent of the cases. Congenital malformation is perhaps the second most common antecedent lesion. It has been estimated<sup>2</sup> that one-fifth of all such defects become the seat of local infection. In five of our cases a structural anomaly proved to be the predisposing factor. The only other disease incriminated was syphilis which had produced the underlying damage in one instance. Thus in 83.7 per cent of the patients an antecedent lesion was demonstrated. No knowledge could be obtained of possible endocardial damage in the other thirteen cases. In four it was because of inadequate history and failure to obtain permission for post-mortem examination. Nine gave no history of any past infection nor could valvular damage be demonstrated in six of them who came to autopsy. However, it seems fair to assume that scarring from rheumatic infection was present in some of these thirteen in view of the fact that Coombs<sup>3</sup> as well as others has shown that endocarditis may be present even though the patient is never clinically ill.

#### THE CLINICAL PICTURE

The most constant feature in our cases as might be expected was fever which occurred either before or after entrance into the hospital in 97.5 per cent of the patients. Unexplained fever always brings to mind the possibility of subacute bacterial endocarditis particularly when coupled with a cardiac murmur. Capps<sup>4</sup> has emphasized this feature especially with reference to the milder cases and those who are up and about, whose only complaint is a slight elevation of temperature. Our patients were all ill enough to be hospitalized and many had some complication which served as their entrance complaint so that although 78 had fever, only 33 came to the hospital because of it. It is important to note that in spite of its almost universal presence, fever may not be a prominent part of the clinical picture especially insofar as the patient himself is concerned. His attention is often directed to other more annoying features. From our eighty patients, twenty-three different complaints were obtained on admission. Fever, as stated above, was the most common and weakness ranked second, being present in twenty-three instances. In the following table the entrance complaints are presented in related groups.

Two other symptoms, nocturia and loss of vision, were noted in one instance each. None is deserving of any comment except perhaps the occurrence of cardiac failure in thirteen patients before entrance to the hospital. Many writers have stressed the fact that cardiac failure is an

unusual manifestation of early subacute bacterial endocarditis, among them Lewis<sup>2</sup> who, however, points out that it is one of the chief causes of death. This opinion has recently been confirmed by the studies of Buchbinder and Saphir<sup>5</sup>. Its frequent presence in the patients of this series can be explained by the fact previously stated that in most instances the disease was far advanced when the patient came to the hospital.

TABLE I  
RELATED SYMPTOMS

Constitutional		Cardiovascular	
Fever .....	33	Cardiac failure .....	13
Weakness .....	23	Precordial pain .....	2
Joint and muscle pain .....	10	Palpitation .....	1
Loss of weight .....	7		
Chills .....	6	Respiratory	
Headache .....	3	Cough .....	2
Night sweats .....	3	Chest pain .....	2
Backache .....	2		
Stiffness .....	1	Central Nervous System	
Gastro-Intestinal		Paralysis .....	3
Anorexia .....	3	Dizziness .....	1
Vomiting .....	2	Choreiform movements .....	1
Abdominal pain .....	1	Difficult speech .....	1

Enlargement of the spleen as evidence of infection has long been considered one of the physical findings which affords considerable support to the diagnosis of subacute bacterial endocarditis. This feature was demonstrated in 47 or 58 per cent of our patients. Along with this has been emphasized clubbing of the fingers<sup>2</sup>, but this phenomenon was usually absent, occurring in only 10 per cent. Furthermore, in three of the eight cases other reasons were found for the clubbing. In one instance it had been present from childhood and in two it accompanied congenital heart disease. The rarity of its presence even in the face of longstanding infection would seem to indicate that it possessed little significance.

Evidence of infection may also be obtained by routine studies of the blood and urine. Anemia is often a prominent but by no means a constant feature. In our series the red blood cell count ranged from normal to that of a severe secondary anemia. The only correlation to be made was that the degree of anemia seemed to be an expression of the chronicity of the infection. The leukocyte counts were for the most part elevated, averaging 11,790. In a few instances leukopenia was encountered. The urine characteristically contained albumin, blood, pus cells and hyaline or granular casts. Whether the pathologic findings in the urine could be attributed to a toxic process, a concurrent glomerular nephritis, embolism, or a combination of these was difficult to determine even at autopsy. This was particularly true of hematuria which was the most constant laboratory finding. Either erythrocytes on microscopic examination or hemoglobin by chemical test was found in 75 per cent of the cases. This is de-



serving of emphasis not only because it occurs in a high percentage of cases but because it is often evidence of embolism.

The most important single laboratory finding is the demonstration of bacteremia. It must be remembered, however, that the blood stream may remain sterile for long periods or, indeed, throughout the entire course of the illness<sup>6</sup>. In this series *Streptococcus viridans* was isolated in 73 cases ante mortem. In three additional instances the organism was recovered at necropsy from the vegetations or by blood culture. Its presence was proved, therefore, in 95 per cent of the cases.

#### EMBOLIC PHENOMENA

The demonstration of an endocardial lesion or of bacteremia and the recognition of the presence of infection offer no great difficulty. However, an entirely different situation is encountered insofar as the embolic phenomena are concerned. The loosening into the blood stream of a thrombus which may be infected and which finally lodges in any one of the ramifications of the arterial system affords a chance for variation to an almost limitless degree. Physicians have learned what they may ordinarily expect, and look for petechiae, ecchymoses in the finger tips and toes, splinter hemorrhages beneath the nails and retinal hemorrhages. In our series these were noted in 47, 29, 1 and 16 instances respectively. The discovery of one or more of these phenomena often established the diagnosis as in the following case:

Case 18: S. J., a male twenty-one years of age, entered the hospital on October 2, 1931, complaining of fever and weakness for seven days. No history of rheumatic infection could be obtained and there was no physical evidence of a cardiac lesion. The heart was enlarged with the apex at the anterior axillary line. The blood pressure was 125/85. The spleen was not palpable. His temperature on admission was 105.4 degrees. The next day a soft systolic murmur appeared which prompted the institution of a careful watch for petechiae. Four days later he had a chill and shortly after pin-point hemorrhages were noted in the conjunctivae. This was considered evidence enough upon which to base a diagnosis of subacute bacterial endocarditis.

This patient on admission was obviously suffering from infection. There were no localizing signs except possibly enlargement of the heart. However, with the appearance of the murmur the possibility of bacterial endocarditis came to the fore and with the discovery of petechiae the diagnosis was established. This picture is in no way unusual but merely serves to emphasize the

importance of close watch for embolic phenomena in suspected cases.

The type of embolic phenomena thus far discussed represents the ordinary occurrence but does not include all the manifestations produced by this mechanism. The embolus may be so large as to cause extensive infarction such as is sometimes seen in an extremity, or it may be so situated as to damage severely some particular organ. Focal embolic nephritis and the accompanying hematuria have already been considered. Infarcts of the spleen, kidney or cerebrum are common. In our series these were known to have been present in 26, 15 and 14 cases each. Occlusion of a peripheral artery occurred in six. Frequently some such vascular accident furnishes the impetus which sends the patient to his physician. Examples of this type of clinical onset are seen in the following cases:

Case 25: J. S., a male, fifty-nine years of age, entered on October 28, 1930, because of pain in the left upper quadrant of the abdomen. There was no history of a preceding infection nor any evidence of a cardiac lesion. His temperature was 100.6 degrees. During his hospital stay a systolic murmur appeared and later a shower of petechiae occurred. *Streptococcus viridans* was isolated from the blood. The patient died and at autopsy multiple infarction of the spleen was demonstrated which accounted for his pain.

Case 52: N. D., a female, fifty-five years of age, entered the Ophthalmology Service on July 31, 1936, because of protrusion of the right eye for two weeks and loss of vision in it for one. Incision of the eye evacuated a large amount of sanguinopurulent material. Physical examination showed an enlarged heart with a systolic murmur. No petechiae ever appeared but the spleen became palpable. *Streptococcus viridans* was recovered from the blood stream. The patient developed pneumonia and died. At necropsy vegetations on the mitral valve were discovered along with scarring of the tricuspid and a patent interventricular septum.

The first of these cases is unusual because of the sequence of events. Infarct of the spleen occurs commonly but does not ordinarily manifest itself before the onset of other symptoms. The true diagnosis might have remained unknown for some time had it not been for the early appearance of a murmur and of petechiae. In the second case the ophthalmitis was undoubtedly due to an infected thrombus. It is of interest mainly because of the unusual site in which the embolus lodged. In this instance, however, the diagnosis was easily established because some of the other criteria could be fulfilled immediately. These two

patients had in common, damage to a specific organ which caught attention and masked in some degree the fundamental illness.

The neurologic complications of subacute bacterial endocarditis are very striking and, for the most part, result from embolism. Like other embolic phenomena, cerebral infarction may occur at any time during the illness. Frequently as pointed out by Fetterman and Ashe<sup>7</sup>, some neuropsychiatric symptom ushers in the clinical phase of the disease. In their study the cerebral manifestations were divided into three groups: general, focal and psychiatric. The first included those symptoms generally attributed to intracranial pathology attendant upon any severe infection such as headache, coma, dizziness and lethargy. The second group was thought to be embolic and the third included psychotic states, delirium and personality changes. These, because of their nature, could not be thoroughly studied and might have been due to either of the above mechanisms. In all they estimated that in 50 per cent of their cases some neurologic symptom was the first manifestation. A similar group of cases, of which the following is an example, occurred in our own series.

Case 33: R. O., a female, twenty-nine years of age, entered the hospital on February 12, 1935, complaining of weakness of the right hand of six months' duration. For four months she had been weak, tired and short of breath. Fifteen years previously she had had rheumatic fever. Examination showed the unmistakable evidence of mitral stenosis, a body temperature of 102.2 degrees, paresis of the right hand, and petechiae between the fingers. A diagnosis of subacute bacterial endocarditis was made and later confirmed by positive blood culture. The paresis in this case antedated all other symptoms by two months. At the time she entered the hospital the diagnosis was obvious and one can but speculate as to what difficulties might have been encountered at an earlier date. The next case to be presented, however, shows how unavoidable errors may be made when focalizing neurologic signs are present to the exclusion of all other findings.

Case 49: F. K., a female, twenty-eight years of age, entered on November 14, 1934, because of difficulty in swallowing, talking and breathing and weakness of the right arm and leg, all of five weeks' duration. Her illness had begun acutely with jerking of the head and frothing at the mouth. She had no difficulty with vision and no vomiting. There was headache and stiffness of the neck which lasted twenty-four hours and her temperature rose to 101 degrees. Shortly after the onset she became unconscious and remained so

for two weeks. After regaining consciousness she had difficulty in swallowing and was unable to talk. Her husband had noted paralysis of the right arm and leg since the onset of the illness. The positive physical findings were inability to talk, difficulty in swallowing, loss of movement of the soft palate, weakness of the facial muscles bilaterally and weakness of the right arm and leg. A diagnosis of polioencephalitis with residual bulbar palsy was made. During her hospital stay she developed laryngeal edema and tracheotomy was performed. Her temperature was of the septic type which prompted taking of blood cultures; these proved to be positive for *Streptococcus viridans*. Later a systolic murmur appeared and on one occasion the spleen was felt. No petechiae were ever noted. The diagnosis of subacute bacterial endocarditis was made but apparently the relationship of this disease to the bulbar paralysis was never recognized.

The patient died after three months in the hospital and at autopsy a slightly enlarged heart with scarring of the mitral and aortic valves was found. On the mitral valve were many large vegetations from which *Streptococcus viridans* was cultured. The brain showed an area of depression including the middle and inferior anterior sulci on the left which on microscopic examination proved to be due to softening with evacuation of much of the necrotic tissue. In the right parietal region there was an area of recent hemorrhage. Two mycotic aneurysms were observed, one at the bifurcation of the basilar artery and another in the left supramarginal gyrus. The cord was entirely normal both to gross and microscopic study.

This case illustrates the confusion which may arise from the cerebral onset of the clinical symptoms in subacute bacterial endocarditis. Especially is this true when there are no other signs which lead the examiner to suspect a cardiac origin. Even when the existence of the underlying disease is proved, the neurologic signs may not be recognized as only a part of the symptomatology and thus the original error is perpetuated.

Although cerebral embolism is a common and very striking feature of subacute bacterial endocarditis, the brain is by no means the only organ to suffer. Mesenteric thrombosis with *Streptococcus viridans* peritonitis was found at necropsy in one of our cases (Case 49). In six instances peripheral arteries became occluded. Infarction of the spleen and kidneys was very common and has been discussed previously. Perhaps most interesting of all is the following case:

Case 78: R. L., a male, forty-seven years of age, entered on February 10, 1938, complaining of shortness of breath and malaise. There was a



history of frequent tonsillitis and a loud systolic murmur was discovered. The spleen was not palpable. There was clubbing of the fingers which, however, had been present since childhood. No petechiae were found but there were retinal hemorrhages. Blood cultures were positive for *Streptococcus viridans*. The patient's course was steadily downhill and on his twenty-third hospital day he became comatose. Death occurred suddenly two days later. At postmortem examination vegetations on the mitral valve were found. In addition, a friable thrombus was discovered in the circumflex branch of the right coronary artery. The arterial wall was thin and the vessel collapsed on section leading to the opinion that the occlusion was embolic in origin. Such a case appears of interest chiefly because of its rarity; yet, in fact, it really differs not at all from the others because in each the same mechanism, that is, embolism, was at work. Its true interest lies rather in the illustration of the variability of this phenomenon.

So far all the cases have been examples of embolism in the systemic circulation. Under certain conditions the pulmonic circuit becomes involved. This occurs when there is a congenital defect in the cardiac septum or when the infection arises in the right side of the heart. Examples of each are presented in the following two cases:

Case 17: D. M., a male, seventeen years of age, entered on October 2, 1931, complaining of weakness, pain in the chest and cough with bloody sputum. He had been told as a child that he had a bad heart. The heart was enlarged and there was a loud systolic murmur and a diastolic murmur in the aortic area. During his stay in the hospital petechiae were noted. At postmortem examination a foramen in the interventricular septum was found and in it was a vegetation which extended into both the right and left ventricles. Thrombosis of the left pulmonary artery with incomplete occlusion was discovered. There was also multiple infarction of both lungs.

Case 16: A male, G. P., fifty-six years of age, entered on March 24, 1929, because of weakness, cough and pain in the chest. There was no history of any antecedent infection. His temperature on admission was 102.6 degrees. The heart was not enlarged and there were no murmurs. The left lung base was somewhat dull to percussion and on the right the breath sounds were depressed. Bubbling râles were heard throughout both lung fields. A few days later signs of consolidation developed in the left axilla. The spleen

was never palpable and no petechiae were observed. Unfortunately no blood cultures were taken. The patient died on the thirteenth hospital day. Postmortem examination showed vegetations on the tricuspid valve from which *Streptococcus viridans* was isolated. Throughout the lungs there were thromboses of the smaller arteries, infarction and organizing pneumonia. No evidence of underlying endocardial damage was uncovered.

These cases are peculiar because of the localization of the embolic phenomena which in turn was dependent upon the site of the vegetations. In the first the diagnosis was made ante mortem because of the co-existence of an infection in the left side of the heart. In the latter, however, no such circumstance existed. In addition there was absolute lack of any other of the ordinary signs associated with the disease. It is possible that blood cultures might have been positive since it has been reported so in a similar instance,<sup>8</sup> but this alone could not have established the diagnosis.

#### CONCLUSION

The cases of this study illustrate the variation encountered in the clinical picture of subacute bacterial endocarditis. Some differences were noted in the precursory lesion but this feature was not confusing. Those cases which were diagnostic problems or which remained unrecognized all presented some unusual embolic accident which arose either by chance or because of the situation of the vegetations, and it was not until such events were viewed in their proper perspective that the fundamental disease was recognized.

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## AIR-BORNE INFECTION\*

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The theory of air-borne infection has passed through various stages of emphasis.

Recent publications by Wells, working in the Department of Public Health Administration and Sanitary Engineering at Harvard University, have again reopened this problem. He has shown<sup>1</sup> that "droplets expelled into the air from the nose and throat in sneezing, coughing and the like, do not necessarily, as was concluded from Flügge's experiments, fall immediately to the ground within a short distance from their source." Large droplets do follow Flügge's concept of droplet infection, but small droplets rapidly lose their moisture, leaving suspended in the air minute particles called by Wells, "droplet nuclei". Therefore, two factors must be considered in the aerial transmission of infection. The droplets recognized by Flügge, or "droplets proper", have a size larger than 0.1 of a millimeter in diameter<sup>2</sup>; they are rapidly removed from the air by gravity before they can dry and within a short distance from the source. The second form, "droplet nuclei", derived from droplets less than 0.1 of a millimeter in diameter, is properly termed air-borne in that these particles will remain suspended in the air for long periods of time and may be carried through the air for long distances. Droplet infection may change into air-borne infection when larger drops settle, evaporate and are lifted into the air as dust.

Recognizing the limitations of the Petri plate method in measuring true air pollution, Wells<sup>3</sup> devised and reported a new instrument in 1933 called the Well's Air-Centrifuge. Four independent operations are combined: the air flow is created, the amount of air is measured, the bacteria are collected and the bacterial growth can be counted on the collecting medium without separate plating. This instrument received recognition through the committee report of the American Public Health Association on bacteriologic procedures in air analysis in 1937<sup>4</sup>. Since this time almost all studies on air pollution have been made in terms of the Well's Air-Centrifuge.

Because droplet nuclei may remain in suspension for a long period of time and may drift a considerable distance, the viability of the bacteria associated with them becomes an important factor in the spread of air-borne infection. Four organisms characteristic of respiratory tract in-

fections (*Pneumococcus* Type 1, *Klebs-Löeffler* bacillus, *Streptococcus hemolyticus* and *Streptococcus viridans*) were recovered by Wells<sup>5</sup>, two days after artificial inoculation of the experimental room.

Inasmuch as most disease-producing organisms are forced from the upper respiratory tract into the air during coughing, sneezing and talking, Wells has suggested that *Streptococcus viridans* be used as an index to air pollution just as *Bacillus coli* is used as an indication of intestinal contamination of drinking water. However, before studies on the finding of this organism in various locations can be correctly interpreted, further research would appear to be necessary. It is true that this test organism is commonly present in the upper respiratory tract of most individuals<sup>6</sup>; however, as a seasonal incidence of hemolytic streptococcus carriers has been recognized<sup>7</sup>, might there not also be a similar seasonal variation in the number of alpha streptococci discharged from the upper respiratory tract? In addition, it would seem necessary to establish a more direct relationship between the incidence of air-borne alpha hemolytic streptococci and the more pathogenic forms. Are relatively large numbers of this test organism discharged, as for example during talking, or are the numbers comparatively small?

An attempt has been made to answer this last question indirectly by the reports made on the incidence of this test organism in various locations. In Table I the findings of three typical studies are shown. The small numbers of alpha hemolytic

TABLE I  
Alpha Hemolytic Streptococci per ten cubic feet of Air at Several Types of Locations as Reported by Various Investigators

Location	Average Number of Alpha Hemolytic Streptococci per ten cubic feet
Public Schools:	
Modern.....	5.30
Old.....	10.80
Theater, modern air conditioned.....	.60
Operating room.....	3.00 Wells <sup>1</sup>
New York City	
Schools.....	2.20
Subway.....	1.50
Streets.....	1.80
Non air-conditioned theaters.....	1.50 Buchbinder <sup>8</sup>
S. U. I. Hospital	
Traffic corridor.....	0.15
Operating rooms (all).....	0.55 MacDonald <sup>17</sup>

streptococci isolated from the air can be explained in part by dilution. Dilution not only limits the numbers of this test organism per cubic feet of air, but also serves to limit the importance of air-borne infection in another manner. "Before the defenses of the body can be overcome and disease produced, it is necessary for the individual to come in contact with a sufficient number of organisms so that they can successfully invade the body and multiply. If a discharge which was teeming with disease-producing microorganisms

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becomes so diluted that no individual can possibly come in contact with a sufficient number of germs to cause disease, the infective discharge has been disinfected by dilution alone"<sup>9</sup>.

TABLE II

A Comparison of Alpha Hemolytic Streptococci in a Specific Situation with Estimated Counts of Certain Pathogenic Organisms in the Same Situation

Location	Number of Individuals	Time	Number of Organisms
Main corridor, Elevator entrance S. U. I. Hospital	217	30 min.	0.48 alpha streptococcus
Same	217 diphtheria carriers	50 hours	1.00 virulent diphtheria organism
Same	217 5% meningococcus carriers	20 hours	1.00 meningococcus

In Table II the effects of dilution are further shown. In one of the busiest corridors of the General Hospital of the State University of Iowa, ten readings were taken at various times throughout the day by means of the Wells centrifuge. During the total testing time of approximately thirty minutes 217 individuals passed this point. Let us suppose that these 217 individuals were all diphtheria carriers. Teague<sup>10</sup> has shown that when Loeffler plates were held about three inches from the diphtheria patient's mouth and the patient was told to cough a number of times, most of the plates showed only a single diphtheria colony. Cough plates made in a similar manner using blood agar as a culture medium would usually show at least several colonies of alpha streptococci. Let it be granted, however, that these diphtheria carriers would discharge the same number of diphtheria organisms as alpha streptococci were discharged in this given situation. The number of virulent carriers would vary, but Goldberger, Williams and Hachtel<sup>11</sup> in the city of Detroit report two per cent. Taking into account this dosage and the normal rate of respiration, it is calculated that an individual replacing the air centrifuge at the observation point mentioned, would come in contact with only one virulent diphtheria organism over a period of fifty hours.

Studies of Bassett-Smith, Gordon, Mathers and Herrold<sup>12</sup> show that in the American camps under conditions of ordinary life and weather, there may be anywhere from two to five per cent of meningococcus carriers. Continuing this hypothetical comparison, let five per cent be considered as the largest number of meningococcus carriers that would be present in this situation. Assuming that as many meningococci would be discharged as alpha streptococci were shown to be discharged by centrifuge readings, it is estimated that an individual who replaced the centrifuge would come in contact with only one meningococcus organism in twenty hours.

In a recent article by Wells<sup>13</sup> it is suggested that studies as yet unpublished show the efficiency of the Wells air-centrifuge for extremely small droplet nuclei to be rather low. It is undoubtedly true that maximum dosage is not shown by this instrument, but if all readings in the two tables were doubled the dosage would still be small.

A number of studies show that certain disease-producing organisms can be isolated from the air. Only a few of the more typical experiments will be reviewed.

Brown and Allison<sup>14</sup> in 1937 reported an investigation on the isolation of hemolytic streptococci from the air of scarlet fever wards. Throat swabs from the patients were simultaneously examined; the strains isolated from the two sources, that is from patients and air, were very similar in serologic type and in the relative proportions of the various types. The organisms were recovered from the air by placing blood agar plates for a limited period of time two or three feet from the ground. They found that disturbance of the air, as by dusting and sweeping, increases considerably the number of organisms in the air. White<sup>15</sup> has shown also an increase due to sweeping using the same testing technic and cites an experiment by Colebrook showing that hemolytic streptococci will remain viable in dust for at least ten weeks and that their mouse-virulence remains unchanged for twenty-five days. Given an exceedingly dusty atmosphere with little dilution the organisms can be isolated from the air. Cruickshank<sup>16</sup> suggests that cleansing of the polluted air by free ventilation and the removal of infected dust by damp sweeping and dusting are two simple and probably effective measures for the prevention of air-borne hemolytic streptococci.

One difficulty in interpretation of studies, in which the testing technic used was exposure of blood agar plates, is dosage. A recent report<sup>17</sup> on a scarlet fever epidemic occurring in the maternity division of the University of Iowa General Hospital throws some light on this question. "Six samples were made at various periods of the day in a five-bed ward in which there were five patients with typical positive throat cultures. The ward was small, having a length of 18 feet, width of 16 feet and a height of 9 feet. Masks were not worn by these patients; talking and laughing were encouraged. No hemolytic streptococci were isolated from the 60 cubic feet of air samples in this location." Thirty-two samples, each of ten cubic feet of air, were taken in the maternity division. In all locations a total of seventeen patients either had scarlet fever or positive throat cultures. "Four hemolytic streptococci, which were judged typical, were isolated from the 320

cubic feet of air." An individual in this location, taking into consideration the normal rate of respiration, would come in contact with one hemolytic streptococcus in four hours. On several different occasions ten cubic feet centrifuge samples have been taken in different rooms containing scarlet fever patients. The centrifuge was placed within the range of droplets proper. Talking was encouraged during the sampling and yet all were negative. If sufficiently large samples had been taken the organism might have been recovered.

Eagleton,<sup>18</sup> by examining the air around meningococcus carriers in army sleeping huts, found this organism could be carried at night from a carrier to his neighbors unless the bed space was more than five feet, and suggested more adequate ventilation. Cruickshank<sup>16</sup> states, "the meningococcus has presumably a low viability, since adequate bed-spacing is sufficient to reduce both the carrier-rate of the organism and the incidence of cerebrospinal fever."

Little evidence has been presented either for or against the aerial transmission of such diseases as diphtheria or whooping cough, although it has been suggested<sup>16</sup> that in spite of the susceptibility of the child population to whooping cough the range of infectivity is probably limited due to low viability.

Many studies have been reported on the aerial transmission of tuberculosis. One of the more recent studies is that by Pressman<sup>19</sup>. Four evaporating dishes containing twenty cubic centimeters of normal saline solution were placed on the floor in each corner of the patient's room where it was exposed for one week. Fifty-five samples tested by this method, or 87 per cent, were positive. The Wells centrifuge was also used with twenty cubic centimeters of sterile saline solution. The machine was placed in the center of the room while 27 cubic feet of air were aspirated with negative results. The substitution of saline for a culture medium appears to lower the efficiency of the Wells centrifuge enormously. A short series of readings using *Bacillus prodigiosus* as a test organism has shown only a five per cent efficiency when saline is used as a collecting medium as compared with the use of nutrient agar<sup>20</sup>.

A more recent study on tubercle bacilli in the air is reported by Sim and Flinn<sup>21</sup>. The first part of the study was carried out with a very similar technic to that used by Pressman. Beakers containing sterile distilled water were left in the wards in each test for seven days. Cultures and guinea pig inoculations were negative. Samples of dust were collected from the sweepings of the floor with similar results. To investigate further the aerial transmission of tuberculosis organisms,

a viable strain of bovine tubercle bacilli was sprayed into a chamber. Open Petri dishes containing Petroff's medium were placed every eight inches across the floor. The authors state that "because of their size and the fact that they are retained in an albuminous material they tend to fall rapidly out of the air. The effect of the size of the bacilli in reducing the hazard from infection in institutions is shown in the fact that our Petri dishes beyond six feet from the atomizer sprays did not develop any growth of the organisms. If the bacilli remained suspended in the air the dishes farther away should have shown evidence of inoculation." They also conclude that "the Wells centrifuge, when saline is used, is worthless in studying the contaminated atmosphere of a hospital or other localities. The acid fast bacteria are not wetted in the centrifuge and simply pass through the solution."

Evaporating dishes containing normal saline were placed in a ward containing five patients with active tuberculosis in the University of Iowa General Hospital. Two of these dishes were placed within the range of droplets proper. Additional dishes were placed beyond this distance. All evaporating dishes were exposed for one week with negative results. It appears then that when pathogenic bacterial forms are air-borne in the form of droplet nuclei, the dosage in most situations must of necessity be extremely small due primarily to dilution.

It would seem much more probable that the filterable viruses are air-borne. They appear to be sufficiently resistant from the standpoint of drying, since this resistance is usually stated as being greater than that of the vegetative cells and less than that of bacterial spores. The rapidity with which certain diseases, such as measles and chickenpox may be spread, has not been adequately explained. Cross-infections of the virus diseases are notably more common than in those diseases caused by bacteria. The dosage again must be extremely small, but possibly even this small dosage may be sufficient to produce infection due to the greater susceptibility generally existing to virus diseases.

The outbreak of psittacosis<sup>22</sup> among the personnel of the Hygienic Laboratory of the National Institute of Health in Washington, D. C., is cited by some investigators as an example of air-borne infection. Eleven of the personnel became infected and of these, eight had no connection with the investigation. Person to person infection did not apparently occur. Chope and Smillie<sup>23</sup> state "The epidemiological studies indicated strongly that the infection in this instance was air-borne. If this disease, due to a filterable virus, could be



transmitted through the air as a medium, is it not possible that the virus of the common cold, the virus of influenza, of smallpox and measles, of encephalitis, and other conditions could be transmitted also through the same medium?"

Little experimental work has been carried out on air-borne viruses. Since bacteriophage is comparable in size with some of the known viruses and is resistant to drying, it has been used as a test agent in the study of virus spread. Colvin<sup>24</sup> in a study of the air dissemination of bacteriophage noted the importance of drafts in rapidly carrying germ-laden droplets from one part of a building to another and concluded that bacteriophage is transmitted through the air in association with droplets and dust in a manner entirely analogous to the transmission of bacteria.

Although there would appear to be a possibility of air-borne viruses in the form of droplet nuclei, the air in an operating room constitutes a much greater hazard. Meleney<sup>25</sup> as the result of a nine-year study in the New York Presbyterian Hospital states that the most important possible sources of infection in clean operative wounds are the skin of the patient, the air of the operating room, the nose and throat and hands of the operating personnel, and the instruments and materials used in the operation.

Ives<sup>26</sup> after reviewing the literature concluded that about five per cent of clean surgical wounds become infected, and by taking a culture of a series of wounds during the actual operation, showed all of them to be extensively contaminated with bacteria, with the staphylococci predominating. He also believed that the presence of large numbers of staphylococci in the air and the fact that they cause 50 to 70 per cent of all wound infections were not without significance.

Cairns<sup>27</sup> reports that following intracranial operations in his clinic in one year, 25 per cent of the operative fatalities were due to operative infection. He believes that the risk of droplet infection is probably greater in operations on the central nervous system than in other regions, partly owing to their greater duration and partly to the greater vulnerability of the brain and meninges.

Hart and his associates<sup>28</sup> at Duke University, as a result of extensive research have come to the following general conclusion: "It is our opinion that as surgery has embraced operative procedures of greater magnitude and with inevitable trauma, the air-borne organisms have become a distinct hazard. The concentration of operative work by the increased utilization of operating room space, has added to the danger of infection from air-borne organisms (in our experience predominantly staphylococci but occasionally streptococci). It is

our opinion, based on experience with this work, that many of the operative wound infections with staphylococci, which heretofore have been ascribed to contamination of the skin, are air-borne."

MacDonald<sup>29</sup> made a quantitative bacterial analysis of the air of operating and delivery rooms and related areas of a general hospital by a comparison between exposed plates and centrifuge tube counts. The centrifuge and the plates were so placed that all readings were in terms of droplet nuclei. The average number of organisms recovered from operating-room air was 230 per ten cubic feet. This is in some instances a higher count than that found in the operating-room corridors. This average count is ten times that found in isolation wards of the General Hospital of the University of Iowa.<sup>30</sup> Approximately six times as many hemolytic staphylococci as alpha hemolytic streptococci were found. The operating room showing the highest counts of these organisms also had the largest number of infections in clean operative wounds. The extent of bacterial contamination in operating-room and delivery-room air was found to be influenced by the number of individuals and the amount of activity in a given situation. An analysis of the operating-room air over a twenty-four hour period showed that there is a marked rise throughout the operating period and that following the day's work the settling rate is such that there is no accumulation of droplet nuclei from day to day.

This increased interest in operating-room air has led to further questioning of the efficiency of surgical face masks. Hunt<sup>31</sup> makes the following observation: "Fortunately the majority of wound infections are mild and superficial, adding but a few days to the patient's hospitalization, but about once in two or three thousand cases, there occurs accidental virulent infection which moves rapidly to a fatal termination. It is my belief that the mild infections are generally from the dried and light, attenuated bacteria which float in the air day in and day out, while the severe ones are from air contamination, as by some member of the operating room force or spectator who has a sore throat or an upper respiratory infection and ejects infectious material by coughing, sneezing or clearing the throat, etc."

This raises a very important point in surgical masks. Various impermeable masks have been devised and recommended.<sup>32 and 33</sup> This type of mask should be effective from the standpoint of droplets proper, but droplet nuclei undoubtedly escape into the air around the mask. Before the impermeable type of surgical mask is accepted there is need for study of droplet nuclei virulence. If virulence is maintained the mask having a high

filtering efficiency would have more value. Research on various types of masks and associated problems are being carried out in the Hygienic Laboratory of the State University of Iowa.

Various methods are being used in an attempt to reduce air-borne infections in the operating room. Cairns<sup>27</sup> reports that by using filtered air under a positive pressure the bacterial counts and number of infections were markedly reduced. The use of certain antiseptic solutions in extremely fine suspensions by means of an electrically operated spray has been recommended.<sup>34</sup> Hart<sup>28</sup> states that forced ventilation, limiting the number of persons in the operating room and control of carriers, did not reduce the number of organisms in the air sufficiently to eliminate all infections. A special lamp\* has been developed in which 80 per cent of the rays are those having the highest bactericidal power. By using eight of these lamps grouped about the operating-room spotlight, the air within the field of operation has been shown by Hart to be practically sterile. Patients operated upon under this radiation are reported as not having infected wounds, there is less elevation of temperature, less pain and a more rapid convalescence.

#### CONCLUSIONS

1. There would appear to be little need for general sterilization of air, providing ventilation is at all adequate.
2. Although bacteria are air-borne in the form of droplet nuclei, this fact is minimized by the low dosage that must exist in most situations, and by the resistance of the healthy individual.
3. The air-borne nature of virus diseases remains a possibility.
4. The greatest hazard from the standpoint of air-borne infections is in the operating room. Various solutions are reported. The one best method remains an experimental problem.

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## THE USE OF SULFATHIAZOLE IN GONORRHEAL INFECTIONS OF THE MALE

### PRELIMINARY REPORT

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The introduction of sulfanilamide to the profession in 1935 revolutionized the treatment of many infectious diseases. Most of us have used the various chemotherapeutic drugs in the past five years, many times with almost miraculous results. On other occasions when indications were not too definite the results have not been worth the effort and possible dangers to which the patient might be subjected. As time passes and new compounds are introduced, more exact specificity and limitations for their use will follow.

This paper desires only to make a preliminary report on the use of sulfathiazole in gonorrheal infections of the male. It is well recognized that sulfathiazole holds great promise in other bacterial infections. With the use of any of the sulfonamide derivatives there are certain common limita-

\*"Sterilamp" (Product of Westinghouse Electric and Manufacturing Company).



tions and dangers which have been repeatedly stressed in the literature and we should not lose sight of these facts in our enthusiasm for the newer compounds.

The percentage of cures in gonorrheal infections in the male with the use of sulfanilamide was first claimed to be as high as 85 per cent. In our own experience and type of practice it has never been more than 25 per cent unless it has been bolstered with adjunct treatment or hospitalization. The introduction of sulfapyridine definitely increased the rate of cures, but its toxicity prevented many physicians from prescribing sulfapyridine for any but their more refractory cases. Many patients treated and given clinical cures with sulfanilamide and sulfapyridine could not carry on their usual duties during treatment because of the associated nausea, vomiting, dizziness and headaches. In addition the physician must have in mind constantly the somewhat remote but real possibility of serious toxic effects, such as blood dyscrasias, renal damage, etc.

In May, 1940, sulfathiazole was made available to us for a preliminary clinical trial. The possibility of its use in gonorrheal infections was suggested by certain earlier experimental and clinical work. Because of the aforementioned limitations of sulfanilamide and sulfapyridine, preliminary clinical treatment of gonorrheal infections was started. Since that time thirty consecutive cases of gonorrhea in the male have been followed for periods varying from six weeks to seven months. The duration of the infection before treatment varied from one day to one year; sixteen patients were seen within seven days of the onset of clinical infection and the remaining fourteen had been infected more than one week. Twenty-one of these patients were experiencing their first infections, while nine had had one to three previous infections. The occupations of these individuals cover almost the entire field of gainful employment. In each case a definite urethral discharge was present from which typical gram-negative, intracellular diplococci were found in the stained smear.

Sixteen patients were seen within one week of the onset of clinical infection. One would naturally expect to find few complications in such a group and this was true except in one instance where a moderate prostatic infection was discovered during the course of active treatment. The dosage schedule was uniform for the entire series. This consisted of one gram of sulfathiazole three times a day and was continued for one week after the urethral discharge stopped. The dosage was then decreased to one and one-half grams a day. Thirteen of these patients had had no previous treatment, while three had taken sul-

fanilamide or neoprontosil for a week with little improvement. In this group the urethral discharge disappeared in an average of 2.1 days. Most of these patients had clear urine within four to six days. In a few instances small shreds persisted for a few days longer. The one patient in this group with prostatitis was treated with a few massages, and the pus cells found in the prostatic secretion rapidly disappeared. The total average dose of sulfathiazole was thirty-five grams. Five of the group took twenty-five grams in an eight day period and then failed to come in for further examination and treatment. All five were later located and have been free from all evidence of infection to date.

The remaining fourteen patients of the original series consisted of those in whom the infection had been present for a week or more. Two of these patients returned for a week and disappeared, having had good early results. One patient had been on sulfanilamide for forty-two days when he appeared for treatment. In addition to the persistence of a profuse urethral discharge at the time of the first examination, there was a definite rash over his face and body. The sulfanilamide was stopped and within five days the rash had disappeared. Two weeks after the original visit, sulfathiazole was initiated and the dermatitis recurred. It is interesting to note that the dermatitis occurred on each occasion shortly after he had begun to work in the sun. No further attempts have been made to use chemotherapy on this individual. This leaves eleven patients out of the fourteen who appeared after one week or more of the disease, who could be and were treated. Two cases were uncomplicated and nine had complications that included prostatitis, epididymitis, acute posterior urethritis and specific arthritis. Seven of the patients had had previous treatment with sulfanilamide or sulfapyridine without much success. Our results were satisfactory in nine cases. The average time for the discharge to persist was four days and the urine was clear in an average of 6.5 days. In these complicated cases prostatic massage was used when indicated and in one case with a congenital accessory blind urethra three centimeters in length, merthiolate instillations were used.

A few remarks about the laboratory findings in this series seem pertinent. On a daily dosage of three grams the average blood concentration of sulfathiazole taken forty-eight hours after the drug was begun was 3.25 milligrams. The lowest concentration obtained was 1.9 and the highest was 4.4 milligrams. The ratio of cures was seemingly not affected in those patients having the lower blood concentrations. Blood concentrations

were taken on most of these patients at daily intervals and the previously cited figures are about an average of these later determinations. We detected no change in the total red and white count or hemoglobin, and there was no manifestation of renal irritation in the series, such as casts or red cells would suggest. In the entire series three patients complained of moderate dizziness and the only serious toxic reaction was the one case of dermatitis mentioned previously. We do not mean to imply that there are not definite toxic dangers from sulfathiazole, because we have seen them occur in other types of infections. The most common of these are nausea, vomiting, febrile reactions, dermatitis and conjunctivitis. It is our impression that the younger individuals, as concerned in this series, are definitely freer of these types of toxic reactions.

#### SUMMARY

1. We have presented a series of thirty consecutive cases of gonorrhea in the male; sixteen patients were seen during the first week of infection and fourteen had the infection for a longer period of time.

2. Sulfathiazole appears to be of a rapid and definite value in the treatment of both complicated and uncomplicated cases. In our series the rate of cures was approximately 85 per cent.

3. Toxic reactions, as compared to those seen with sulfanilamide and sulfapyridine, were less frequent, but they may occur.

#### SPONTANEOUS RECESSION OF MALIGNANT TUMORS

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Isolated cases of recession of malignant tumors in the absence of adequate, tested therapeutic agents, have been previously reported. An inadequate therapeutic agent is one which, when applied to a large group of cases, fails to effect a reasonable percentage of cures. It is known that the different types of tumors vary in their rates of growth, as is illustrated by the slowly-growing basal cell carcinoma of the skin and the rapidly-growing carcinoma of the stomach. The rate of growth is recognized as being modified by physiologic factors connected with the host. Youth, lactation and pregnancy, each tend to accelerate the growth rate of a tumor, while advanced age is the only known physiologic factor in the host which tends to retard it. Local recession of a tumor can be caused by easily understood commonplace pathologic processes. For example, if a neoplasm be-

comes infected or has areas of degeneration due to insufficient blood supply, necrosis followed by granulation tissue repair frequently occurs. However, when absorption of a tumor occurs in the absence of the aforementioned, local pathologic processes, no proved explanation can be given. When an inadequate therapeutic agent or no therapeutic agent has been used, this temporary or permanent absorption of the tumor has been called spontaneous recession.

#### REVIEW OF THE LITERATURE

Rohdenburg<sup>1</sup> collected 302 cases from the literature in 1918. He classified the theoretic causes of the recession as follows:

1. Incomplete surgical removal of the tumor. This may act by interference with the blood supply, by high fever after the operation, or actually may not be a complete removal.

2. Heat. General, acute infections, such as erysipelas, tuberculosis or pneumonia, and heat from external sources have caused spontaneous recession.

3. Recession of growth during profound alterations in general metabolism. This is illustrated by the fact that animals in a state of poor nutrition are not good subjects for inoculation with tumors.

Since Rohdenburg's work, there have been four articles reporting new cases, but not offering anything of apparent value in the way of new theoretic causes. Hanser<sup>2</sup> reported a case of carcinoma of the rectosigmoid, on which two biopsies taken one week apart were both positive for carcinoma. Six weeks after the biopsies, abdominoperineal resection was done; the removed specimen, as well as the explored abdomen, showed no trace of carcinoma. Hanser's explanations are much like those of Rohdenburg, with the addition that he mentioned severe loss of blood as a possible cause for recession of a neoplasm. Shore<sup>3</sup> recorded a spontaneous cure of a congenital, recurring connective tissue tumor. The patient was a child with a seven-year cure, after two unsuccessful attempts at surgical removal of a fibrosarcoma. Shore seemed somewhat dubious of the diagnosis. Hine<sup>4</sup> reported on spontaneous cure of retinal gliomas, citing three eyes in one family. He stated that the patients had not had scarlet fever, and could offer no explanation for the recession. In the discussion which followed, Stalland told of a case of a malignant lymphadenoma, which had a spontaneous cure following an attack of scarlet fever.

#### CASE REPORT

E. J., a white male, seventy-two years of age, was first seen on August 31, 1937. He stated



that on July 28, 1937, he had bumped his breast bone on a door which had stuck when he was attempting to open it. Due to the fact that his breast bone felt sore, he had looked at it almost daily. About one week after the apparently trivial accident, a lump appeared over the right side of the breast bone and grew rapidly during the ensuing three weeks.

On examination, there was a mass at the level of the sternal angle and to the right of the midline. The skin temperature over the areas was comparatively higher than that of the surrounding skin (one and one half to two degrees higher). The mass was three inches in diameter, and protruded from the sternum about 1.5 inches. It was not attached to skin, but was firmly attached to deeper structures, that is the sternum, ribs and pectoral muscles. It had the consistency of a hard rubber ball. The skin over the mass was slightly bluish in color. No other masses or enlarged lymph glands could be felt elsewhere in the body. The liver and spleen were not enlarged. The patient's rectal temperature was normal, and he looked and felt fairly well. An examination of the blood and urine was essentially negative.

The patient did not return for the completion of his examination until December 10, 1937. In the intervening period the mass had grown, measuring five inches transversely and 6.5 inches longitudinally, and protruding two inches from the chest wall. An x-ray on this date showed that the tumor was intimately associated with the sternum and adjacent ribs, protruding one inch posteriorly from the sternum into the anterior mediastinum. No definite diagnosis could be made from the roentgenogram, but a tentative primary diagnosis of lymphoblastoma was made, with the secondary possibility of myeloma being borne in mind. The remainder of the chest picture was negative, as were all other bones in the body. Once again the blood and urine were essentially negative. Wassermann and Kahn tests, taken on this date, were negative as were two repetitions of the tests within two weeks.

Both biopsy and x-ray treatments were refused. On December 27, 1937, the patient was instructed to take ten grains of potassium iodide three times daily. This treatment brought an unexpected result. By January 5, 1938, the tumor had entirely disappeared. The skin temperatures over the entire chest were practically equal, excepting toward the axillae. For a short time, the diagnosis of malignancy was in doubt. However, on January 31, 1938, while still under treatment with potassium iodide, the patient came in with a recurrence. The tumor was three inches in diameter, and

stood out 1.5 inches from the chest wall. The use of potassium iodide was discontinued. The growth rate of the tumor was very rapid. By February 8, 1938, the tumor looked like a small football, measuring ten by seven inches, and standing out 3.5 inches from the wall of the chest. For the first time, an axillary lymph node was enlarged, one of the right ones measuring about 2.5 inches in diameter.

The patient rapidly lost weight and strength. He maintained a temperature of approximately one hundred degrees, the skin temperature over the tumor area being two to four degrees higher than this. His white blood counts and smears were always within normal limits, his only hematologic abnormality being a secondary anemia. Finally the patient consented to being photographed. This was on March 20, 1938; the tumor having reached the measurements of thirteen by nine inches and standing out four inches from the chest wall. Due to delay in assembling equipment, the patient was not seen until two days later. The tumor had disappeared entirely visually and palpably, save for a feeling of slight thickening in the sternal attachments of the right pectoralis major muscle. The right axillary node was about 1.5 inches in diameter. The skin temperatures were uniform except for both axillae where it was higher, being 1.5 degrees higher over the skin over the right side. On April 3, 1938, the patient commenced refusing all food. On the evening of April 5 he developed a bronchopneumonia, from which he expired about noon on April 6, 1938. During the interim between March 22 and the date of his death, the primary tumor had not reappeared nor had the axillary node become more enlarged.

A postmortem examination was done two hours after the patient's death. His extreme emaciation was a notable finding. There was a greyish-yellow infiltration of the medial five inches of the right pectoralis major muscle. The right half of the sternum and all of the attached right ribs, from just above the angle to the xiphoid and extending out for a distance of about four inches on the ribs, cut like soft cartilage and had a yellowish-gray color. The enlarged right axillary lymph node was found, and measured one inch in diameter. It was a yellowish-gray color, bulged slightly on cutting and had a sheen like watered silk. The lungs showed an early, hypostatic, lobular pneumonia. The remainder of the findings were essentially negative. The heart, aorta and blood vessels were in good condition. The spleen was of normal size; the liver edge was sharp. The esophagus, trachea and all the mediastinal area appeared normal. No evidence of a tumor elsewhere in the body was found.

The following histologic report on the tumor and the accompanying photomicrographs were furnished by the Mayo Clinic, Rochester, Minnesota: "The histologic examination reveals a neoplasm in which the predominating cell is the small lymphocyte. Other features of interest are the marked fibrosis in some areas and the occasional presence of giant cells. The latter are not typical Sternburg or Dorothy Reed cells, and in some instances present degenerating muscle cells. This is most likely a lymphosarcoma, although the possibility of its being a reticulosarcoma or Hodgkin's disease must be considered."

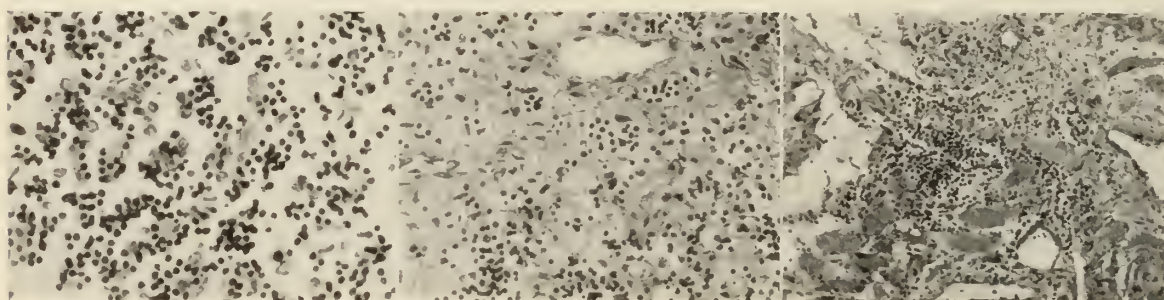


Fig. 1. From a lymph node. Shows the appearance of the cells, which are predominantly lymphocytes and lymphoblasts.

Fig. 2. From a more fibrous portion of the tumor. Has the fibrosis similar to that resulting from x-ray therapy.

Fig. 3. Shows the tumor invading and destroying the skeletal muscle of the chest wall.

#### ABSTRACT OF ROHDENBURG'S CASE

Rohdenburg's patient was forty-five years of age, and was seen first on April 26, 1916, having had a tumor the size of a walnut in the left pectoral muscle and enlargement of the anterior and posterior cervical chain of lymph nodes for five days. Biopsy of a cervical node showed lymphosarcoma. Coley's fluid and x-ray treatments were given without benefit between May 5 and August 1916. In September, 1916, in spite of negative Wassermann reactions, he was given a course of salvarsan injections. All of the enlarged lymph nodes subsided, and the mass in the pectoral muscle was removed surgically. After six weeks while still under treatment with salvarsan and mercury he had a recurrence. By January 2, 1917, he was weakened and jaundiced. His cervical nodes were as large as five centimeters in diameter, his inguinal nodes were enlarged, his spleen was palpable at the umbilicus, and there was a recurrence in the left pectoral muscle about five centimeters in diameter. A mass ten centimeters in diameter was present in the epigastric region. On February 16, 1917, all of the tumors disappeared overnight. This recession persisted for one week when an increase in size again occurred. Before his death on March 5, 1917, the nodes attained a size comparable with the condi-

tions present before recession set in. No autopsy was obtained.

In both Rohdenburg's and our cases, the first spontaneous remission followed the use of antiluetic drugs, in spite of negative Wassermann reactions. Salvarsan and some mercury was used by Rohdenburg; potassium iodide was used in our case. Both cases had a reappearance of the tumor, followed by a second, unexplainable recession. Both cases belonged to the group of malignant lymphomas. Antiluetic drugs have been used in the treatment of malignancy, without avail in many instances. For example Bolognino reported

on the use of potassium iodide in a case of adenocarcinoma of the testicle, and Koster told of its use in a case of sarcoma of the orbital fossa. Neither case showed any benefit from the drug.

#### NEW WORK

Fay has stated<sup>5</sup> that those areas of the body having higher surface temperatures tend to have the greatest number of malignant growths. In general, he has found that by refrigeration below a certain point he causes an ischemia of the tumor mass and a resultant necrosis of the tumor cells. This is followed by fibrosis. Growth and mitoses in the tumor tend to fall off. The general condition of the patients tends to improve for a time.

Strauss<sup>6</sup> has used surgical diathermy alone on carcinoma of the rectum. Many of these cases were inoperable and advanced, with fixed masses and metastases to lymph nodes. Since a high percentage of these patients are alive and well, three to six years later, by definition these will have to fall into the class of spontaneous recession of tumors. Following the application of surgical diathermy to the carcinoma, these patients gained fifteen to fifty pounds in weight, their red blood cell count and hemoglobin became normal, and they lost their cachectic appearance. This treatment does not destroy the carcinoma cells in the lymphatic glands, nor does it even destroy all of



the carcinoma cells locally. Strauss believes that the beneficial reaction may be attributable to an intense stimulation of the reticulo-endothelial system, and the consequent local and general action of the macrophages. Kolischer had said that electrocoagulation of the tumor caused certain substances to be thrown off into the circulation which immunized the patient against the further progress of the disease. Strauss has been unable by methods as yet used to find any elements not normally present in the blood or lymph stream which might explain the reaction.

Willy Meyer<sup>7 and 8</sup> has assumed that cancer grows only in an alkaline medium. He states that the blood of patients with advanced carcinoma shows an increasing alkalinity. He treated patients with advanced malignancies by means of lowering the hydrogen ion concentration of their blood. Any recovery under such treatment would have to be considered a spontaneous recession. One of the parts of his treatment was the production of artificial fever with the radiotherm. This, of course, somewhat obscures the exact value of the acidosis, since heat is considered to be such an important agent in the spontaneous recession of tumors.

#### DISCUSSION

Since the classical paper of Rohdenburg was published, several theoretic causes of recession of malignant tumors have been discovered.

1. The production of recession by diathermy coagulation of a portion of the cells of the primary carcinoma of the rectum has been shown by Strauss.
2. Fay has shown recession by the use of refrigeration.
3. The combined use of acidoses and the radiotherm (heat) by Meyer has caused spontaneous recession in a number of cases of advanced malignancy.
4. Rohdenburg had a case of lymphosarcoma which showed spontaneous recession following the use of an antiluetic drug.

When the term "spontaneous recession" is used, it is suggested that more discrimination be exercised. The tendency has been to be very strict in viewing any treatment of malignancy other than removal or irradiation. Such a therapeutic attitude is the only practical one which the clinician can assume at the present time, unless he is in clinical research. However, in the field of investigation, even in clinical investigation, an open mind must be preserved. Otherwise, when a possibly hopeful new idea in the treatment of malignant neoplasm is stumbled upon, observed or

thought of, it may be cast aside as of dubious import.

With all the enormous amount of research, the true etiology of cancer remains unknown. The bare poverty of this knowledge was well brought out in a splendid article by Morton<sup>9</sup> on the etiology of cancer. The most exact statement which could be made was, "It is known (in cancer) that there is an intracellular change which becomes self-perpetuating." Exact knowledge of etiology frequently lags behind therapy. At the present time, insulin helps to keep alive many diabetic individuals but beyond the indefinite idea that there is an insufficiency of the islet cells of the pancreas, nothing more can be stated definitely about the exact etiology of diabetes mellitus.

The percentage of cures from surgical and/or irradiation therapy has about reached its peak. Comparative figures on large series of cases of carcinoma of the stomach or breast taken today, and a series five years ago, will show the truth of this statement. This process repeated with other tumors only brings home the fact more forcefully. A new method of therapy must be found, or we are not making much progress in the treatment of cancer.

This case illustrated a number of points. The first recession of the tumor followed the use of antiluetic therapy as was the result in the case of Rohdenburg. The second and last recession occurred toward the termination of the patient's life. He was greatly debilitated. The comparative skin temperatures over the cancer area varied directly with the degree of activity. Speculation might be made that the general debilitation of the body affected the cancer cells the most, these being embryonic types of cells. Fay's production of recession in tumors might be based on this fact; that is, malignant cells tend to have less vitality than normal cells, and anything which lowers the vitality of the body as a whole tends to affect the malignant cells to a much greater extent. There was a secondary anemia in our case, and a relative anoxemia. This relative anoxemia is produced by Fay by vasoconstriction due to cold, and a slowing up in the general circulation. The histologic picture of the cancerous area which had undergone recession in our case was strikingly similar to that seen in the cases of Fay. A fibrosis similar to that occurring from x-ray therapy was seen. Combinations of the different factors producing "spontaneous recession" of tumors might be tried. For example, the work of Strauss and that of Fay might be used in combination, serially, on cancer of the rectum.

All cases of recession or cure of malignant tumors, resulting from other than the well recog-

nized methods of surgical removal or irradiation, should be investigated. Constructive, imaginative ideas such as those of Fay and of Strauss should not be discarded. The discovery of the use of digitalis should serve as classical inspiration. This showed the working of an open, as well as an acute mind, which was not too snobbish or grandiose to investigate so-called "fake cures."

#### CONCLUSIONS

1. A case of spontaneous recession of a malignant neoplasm is reported.
2. A review of other cases of spontaneous recession has been made, with the idea of stimulating further "unorthodox" thought.

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### THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

#### MELANOMA OF THE CHOROID WITH EXTENSIVE ABDOMINAL METASTASES

H. E. THOMPSON, M.D., and  
M. H. SCHEELE, M. D., Dubuque

The most common tumor of the choroid is the malignant melanoma. According to Ewing,<sup>1</sup> Wintersteiner found them in 0.58 per cent of ophthalmic patients. He also quotes Johnston as stating that one-third of all melanomas originate in the choroid. The case to be presented is of interest because of the extensive metastases in the abdominal cavity which only became evident three and one-half years after a relatively early enucleation of the affected eye.

#### CASE REPORT

The patient, a white woman, fifty-nine years of age, was admitted to Finley Hospital, June 5, 1934, because of "poor vision in the right eye."

*Family History:* There was no history of cancer, tuberculosis, diabetes or mental disease in the family.

*Past History:* The patient had enjoyed good health except for the diseases of childhood and occasional colds. A supravaginal hysterectomy was done about eight years before admission.

*Present Illness:* The patient had noted failing vision in the right eye for about two months before coming to the hospital.

*Physical Examination:* The general examination was entirely negative. The left eye was normal. On examination of the right eye a dark tumor mass was seen jutting into the posterior chamber.

*Course in Hospital:* The eye was enucleated and apparently the tumor was confined to the eyeball. The pathologic report was malignant melanoma of the choroid. The patient left the hospital on the third day.

*Subsequent Course:* An artificial eye was fitted and the patient remained well for three and one-half years. She then noticed that her abdomen began to enlarge and upon examination a diagnosis of ascites was made. Abdominal paracentesis showed dark fluid which was positive for melanin. The urine also showed melanin. After removal of the fluid, an enormously enlarged liver and nodular masses throughout the peritoneal cavity were demonstrable. Later a dark mass appeared at the umbilicus. Fluid reaccumulated and required tapping at about monthly intervals. The patient never suffered pain but failed progressively and died four and one-half years after the operation.

*Final Clinical Diagnosis:* Abdominal metastases with ascites secondary to a malignant melanoma of the right eye.

*Autopsy Abstract:* Externally the body showed evidences of a moderate loss of weight. There were no evidences of metastases about the orbit of the right eye but a small deeply pigmented nodule was found on the left side of the nose. A black tumor also appeared at the umbilicus. A few small tumor nodules were scattered through each lung and beneath the parietal pleura in each half of the chest. The abdomen presented a striking picture due to innumerable metastatic nodules which had entirely replaced the greater omentum and studded the entire peritoneum. Clusters of dark nodules hung in grape-like masses from the descending colon (Fig. 1). The liver was enormously enlarged and the liver substance appeared entirely replaced by coal-black neoplastic tissue. It weighed 4,950 grams. Other metastases were found in the mediastinal, hilic and retroperitoneal lymph nodes and about the head of the pancreas.



The uterus was lacking. Each side of the chest contained 300 cubic centimeters of faintly brown fluid and the abdomen contained 600 cubic centimeters of similar fluid. No metastases were found in the bones. The brain was not examined because of restrictions. The operative scar of the hysterectomy was normal. The arteries showed moderate arteriosclerosis. The anatomic diagnosis was as follows:

*Primary:* 1. Malignant melanoma of the choroid of the right eye. Operation (Enucleation). 2. Metastases to each lung and parietal pleura, iliac and retroperitoneal lymph nodes; skin of the

until recently their exact classification has been a subject of dispute, today the evidence strongly indicates that they arise from the entire end-apparatus of sensory nerves; in other words they are of neurogenic origin.

Pigmented nevi and melanomas may arise in any part of the body where melanin is normally produced. The pigmented nevi are usually benign but not infrequently become malignant and therefore are considered precursory lesions of the malignant melanomas. While they may occur in almost any part of the body there are certain sites of predilection. At the Memorial Hospital, 20 per cent of the melanomas were situated on the head or neck, 16 per cent on the foot, 18.7 per cent on the trunk, 8.7 per cent on the leg, 10.9 per cent on the eye, six per cent on the hand, one per cent on the male genitals, three per cent on the female genitals, 1.3 per cent within the oral cavity, and two per cent were of undetermined origin.

In the eye the neoplasm may occur on the lids, conjunctiva, iris, ciliary body or choroid. The latter are the most common and usually occur in the latter half of life. In general they are easily diagnosed by adequate ophthalmic examination according to Reese.<sup>3</sup> They may be confused with serous detachment of the retina, a hemorrhage of the choroid, subretinal space or vitreous and by metastatic carcinoma. When the diagnosis is made and the growth is confined to the eyeball, immediate enucleation is indicated. If at operation the neoplasm has extended through the sclera or in the optic nerve, exenteration of the orbit should be done.

While these tumors may remain confined to the eyeball, at times they may extend through the sclera and invade the orbit or extend along the optic nerve. The external appearance of a tumor which has invaded the orbit of another patient is shown in Figure 2.

Metastases from ocular melanomas are usually by way of the blood stream and may occur in any of the organs of the body, although the lungs and liver are most often affected. The prognosis while very serious is not as bad as usually believed. The Division of Ophthalmic Pathology of the American Registry at the Army Medical Museum has reported on the outcome in 275 cases after enucleation; 258 of these were located in the uveal tract and 15 were primary in the limbus. Of these 82 had invaded the orbit and were considered hopeless. Forty-one patients were lost to observation; of the remaining 150 patients there were 55 deaths in three years time or less; twelve in from three to five years and ten in five years or longer. Twenty-four were from causes other than metastases, from recurrence or from unknown causes



Fig. 1. Drawing made at necropsy. A portion of the omentum has been removed. The remainder has been drawn upward and conceals the greatly enlarged liver. The upper insert is a cross section of the eye enucleated four and one-half years before death.

nose, umbilicus, liver, pancreas and entire peritoneal cavity, ascites and bilateral pleural effusion.

*Subsidiary:* Moderate arteriosclerosis; operative scar (supravaginal hysterectomy).

#### GENERAL DISCUSSION

The malignant melanoma is recognized as one of the most lethal of all malignant neoplasms. The term includes those tumors formerly termed melanotic sarcoma or melanotic carcinoma. They constitute about two per cent of all malignant neoplasms and 20 per cent of malignant tumors of the skin. They occur at all ages, and according to Pack and Livingston<sup>2</sup> patients at the New York Memorial Hospital ranged from fifteen months to ninety-eight years of age. However, most of them are encountered in middle life. Oddly enough they are comparatively rare in negroes. While

leaving a total of 51 deaths from tumor metastases. This gives a mortality of 21.5 per cent.<sup>3</sup> The tumors usually are very resistant to irradiation, but since an occasional tumor is susceptible, x-ray therapy should be utilized to control recurrence and in the treatment of metastases.

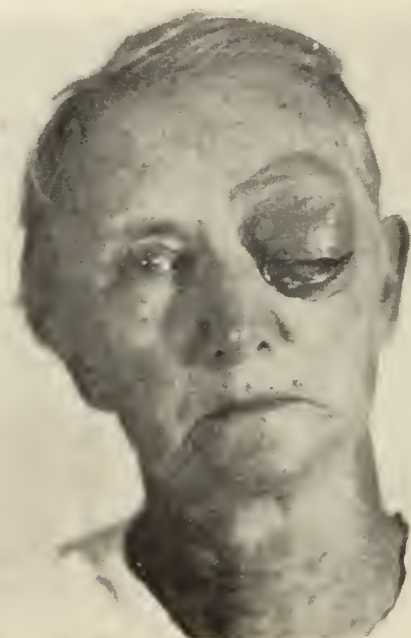


Fig. 2. Photograph of a second case of melanoma of the choroid which has invaded the orbit and produced exophthalmos.

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#### MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

##### Meeting of the Board of Trustees Friday, January 24, 1941

The Board of Trustees of the Iowa State Medical Society met in the central office Friday, January 24, 1941, at nine a. m. The following persons were present: Doctors Oliver J. Fay of Des Moines, John I. Marker of Davenport and Lee R. Woodward of Mason City, trustees; F. P. McNamara of Dubuque, president; and Robert L. Parker of Des Moines, secretary.

Business transacted was as follows: minutes of the two previous meetings were read and approved; bills were authorized; the budget for 1941 was set up; special requests for funds were considered; sending five representatives to the National Conference on Medical Service was authorized; and en-

largement of the radio program of the Speakers Bureau was approved for an experimental period of three months. Meeting adjourned at eleven-thirty a. m.

##### Meeting of the Medical Preparedness Committee Thursday, January 30, 1941

The Committee on Medical Preparedness of the Iowa State Medical Society met in the central office in Des Moines Thursday morning, January 30, at eight a. m. Those present were Doctors Thomas F. Suchomel of Cedar Rapids, F. P. McNamara of Dubuque, and Robert L. Parker of Des Moines. The committee reviewed the reports from the county committees on medical preparedness in regard to the physicians who should be exempt from military service, and passed upon the status of each physician in the state. It then reviewed the list of reserve officers and noted those who should be exempt from military service. Meeting adjourned at six-fifteen p. m.

##### Meeting of the Executive Council Sunday, February 9, 1941

The Executive Council of the Iowa State Medical Society met at the Hotel Fort Des Moines in Des Moines Sunday, February 9, 1941, at ten-thirty a. m. The following doctors were present: E. B. Bush of Ames, president-elect; Robert L. Parker of Des Moines, secretary; Harold J. McCoy of Des Moines, treasurer; Oliver J. Fay of Des Moines and Lee R. Woodward of Mason City, trustees; L. L. Carr of Clermont, C. H. Cretzmeyer of Algona, F. P. Winkler of Sibley, J. E. Reeder of Sioux City, E. F. Beeh of Fort Dodge, C. W. Ellyson of Waterloo, H. A. Householder of Winthrop, C. A. Boice of Washington, R. C. Gutch of Chariton, and J. G. Macrae of Creston, councilors; R. D. Bernard of Clarion and L. A. Coffin of Farmington of the Legislative Committee; A. W. Erskine of Cedar Rapids, Cancer Committee; and Walter L. Bierring of Des Moines, State Health Commissioner.

Dr. Bush presided over the meeting. Dr. Bernard spoke of legislative matters, particularly of S. F. No. 2, the premarital bill, and the Executive Council voted to support it as introduced. Dr. Bernard gave a brief resumé of other bills before the state legislature, and also of the federal bills which have been introduced.

Dr. Reeder reported on the Congress on Industrial Health, and Dr. Erskine presented the Cancer Committee's plan for a bill and appropriation for the establishment of cancer clinics in the state. The Executive Council voted to approve proposed legislation to this end, but asked that the Legislative Committee be relieved of sponsoring the bill. The Executive Council also passed a resolution addressed to the governor recommending that Dr. Walter L. Bierring be retained and reappointed as State Health Commissioner. The meeting adjourned at one-thirty p. m.



STATE DEPARTMENT OF HEALTH

*Walter Biering*

IMPORTANCE OF PNEUMONIA TYPING

Reports from pneumonia typing stations indicate that many patients with pneumonia receive treatment without bacteriologic examination of sputum specimens. With the advent of new chemotherapeutic agents, the tendency has been to prescribe sulfapyridine or sulfathiazole to the neglect of the laboratory and typing station. Case reports completed by attending physicians and returned to the State Department of Health, continue to show a lower case fatality rate among patients who re-

ceive combined treatment with drug and type specific antipneumococcus serum; this is particularly true of pneumococcus pneumonia caused by Types I, II and III.

Every patient with pneumonia or suspected pneumonia should have the benefit of laboratory examination of sputum or other specimens because:

1. A gram stain of the sputum may show predominance of streptococcus or staphylococcus and influence the choice of drug.

TYPE INCIDENCE OF PNEUMOCOCCUS IN IOWA  
Based on Reports to the Iowa State Department of Health from Typing Stations, from January 1940 through December 1940

TYPE	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	
													No.	%
I	53	63	46	22	15	13	0	4	8	13	10	34	281	17.6
II	34	23	27	20	5	5	1	0	4	5	5	27	156	9.8
III	26	55	31	17	7	7	6	6	6	10	14	23	208	13.0
IV	13	14	7	6	1	1	0	1	0	1	7	8	59	3.7
V	12	11	2	9	1	0	3	0	0	0	2	6	46	2.9
VI	1	19	6	8	4	4	3	4	5	4	3	20	81	5.1
VII	12	25	14	20	9	4	0	1	3	5	3	17	113	7.1
VIII	10	11	13	4	1	6	1	1	1	2	8	9	67	4.2
IX	0	11	6	2	3	1	0	1	0	1	2	7	34	2.1
X	3	4	0	2	1	0	1	1	0	3	2	0	17	1.1
XI	7	6	5	2	2	0	0	1	2	1	2	2	30	1.9
XII	3	2	2	2	0	2	0	1	0	1	6	5	24	1.5
XIII	1	0	0	2	0	1	1	1	1	1	0	3	11	0.7
XIV	6	6	3	5	3	3	1	0	2	6	5	4	44	2.7
XV	4	4	4	0	1	0	2	0	1	0	2	2	20	1.2
XVI	3	5	4	4	1	2	0	0	0	2	0	4	25	1.6
XVII	5	6	2	2	0	2	1	0	0	2	1	3	24	1.5
XVIII	9	9	3	2	1	0	5	1	1	2	3	3	39	2.4
XIX	6	10	9	3	2	4	2	0	1	6	7	14	64	4.0
XX	4	4	3	2	3	1	0	2	2	0	4	3	28	1.7
XXI	1	1	3	4	0	1	1	0	0	0	0	3	14	0.9
XXII	4	0	6	0	1	0	0	0	1	0	1	4	17	1.1
XXIII	3	2	5	2	2	1	1	0	1	1	3	3	24	1.5
XXIV	3	2	0	2	0	0	0	0	0	2	3	4	16	1.0
XXV	0	2	2	0	1	0	0	0	0	1	0	0	6	0.4
XXVII	2	3	3	1	0	0	0	0	0	0	2	2	13	0.8
XXVIII	0	0	0	1	0	1	1	0	0	1	3	2	9	0.6
XXIX	1	5	3	2	3	0	1	1	0	1	3	3	23	1.4
XXXI	0	2	0	0	0	0	0	0	1	1	1	2	7	0.4
XXXII	0	4	2	1	0	0	0	0	0	0	0	0	7	0.4
XXXIII	0	1	2	0	0	1	0	0	0	0	0	2	6	0.4
Multiple	4	15	16	9	4	1	8	4	0	7	6	11	85	5.3
Totals	230	325	229	156	71	61	39	30	40	79	108	230	1598	100.0

2. Microscopic examination may lead to discovery of the bacillus of tuberculosis or of Friedlander pneumonia.

3. Should the pneumococcus be present, knowledge of type as revealed by the Neufeld method may prove life-saving.

4. Use of type-specific serum along with chemotherapy is impossible without typing.

5. The pneumonia booklet, prepared by the Department's Advisory Committee on Pneumonia Control, contains the admonition, "Reduce pneumonia mortality by accurate bacteriologic diagnosis and modern therapy."

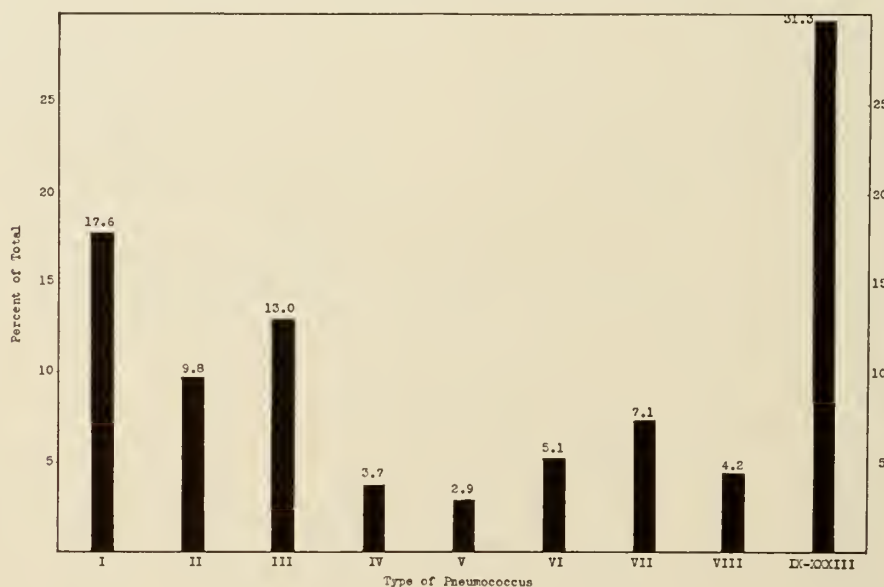
## TYPES OF PNEUMOCOCCUS IN IOWA IN 1940

The accompanying table and bar diagram represent a summary of the reports received during the months of 1940 from pneumonia typing stations in Iowa. The figures and bars show the percentage incidence of the different types of pneumococcus, among a total of 1,598 specimens that showed positive findings.

## ATTENDANTS AT SIXTH PNEUMOCOCCUS STUDY COURSE

Sixteen persons, thirteen laboratory workers and three physicians, attended the sixth pneumo-

TYPE INCIDENCE OF PNEUMOCOCCUS IN IOWA DURING 1940  
Based on 1,598 Reports from Pneumonia Typing Stations



6. Scientific appraisal of chemotherapy and chemoserotherapy is of little value in the absence of information regarding etiology.

7. Knowledge of the type of pneumococcus or causative organism may be crucial, should a pneumonia case be followed by complications of a medicolegal nature.

coccus study course, held at the Department's State Hygienic Laboratory in Iowa City, February 4 to 6, 1941. A significant feature of the course was the discussion and demonstration by Miss Patricia Hardin-Boyd, of the technic for determination of the blood level of sulfapyridine and sulfathiazole. Opportunity was afforded by Miss Hardin-Boyd for members of the group to make

## LABORATORY WORKERS

COUNTY	CITY	NAME	HOSPITAL OR OFFICE
Carroll	Carroll	Sister Paulissa	St. Anthony Hospital
Clay	Spencer	Beulah Skalitzky	Office
Dallas	Perry	Emilie Rasmussen	Kings Daughters Hospital
Dickinson	Spirit Lake	Mrs. James Jackson	Office
Dubuque	Dubuque	Eleanor Bauer	Finley Hospital
Hamilton	Webster City	Betty Dawsey	Hamilton County
Mills	Glenwood	Lillie Mendenhall	Glenwood State Hospital
Muscatine	Muscatine	Ova Leggins	Hershey Hospital
Polk	Des Moines	Margaret Cushman	Iowa Methodist Hospital
Polk	Des Moines	Edith Eide	Glomset Laboratory
Polk	Des Moines	Lillian Schaffer	Mercy Hospital
Story	Ames	Mrs. W. S. Waring	Mary Greeley Memorial Hospital
Woodbury	Sioux City	Mildred Trefs	St. Joseph's Hospital

## PHYSICIANS

Calhoun	Rockwell City	W. W. Stevenson, M. D.	Office
Clay	Spencer	C. C. Jones, M.D.	Office
Delaware	Manchester	C. L. Putnam, M.D.	Medical Director, District Health Service No. 4



their own determination of the drug level according to the Marshall method.

The course was conducted by M. E. Barnes, M.D., Director, and I. H. Borts, M.D., associate director of the State Hygienic Laboratory. Emphasis was placed on the diagnosis of Friedlander's pneumonia bacillus, on practice of the Neufeld method, blood culture technic and mouse inoculation. Those who participated in the course are listed on page 114.


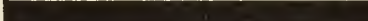
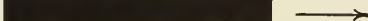

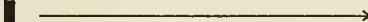



PNEUMONIA FILM AT MEDICAL MEETINGS

During February, 1941, an attractive moving picture film on pneumonia, prepared by Drs. Plum-

mer and Ensworth of New York, was shown at well attended county medical society and hospital staff meetings in Jefferson, Sioux City, Carroll, Council Bluffs, Clarinda, Ames, Keokuk and Muscatine. The film was presented by F. E. Schmidt, M.D., of Chicago. Information pertaining to pneumonia fatalities, case reports and the part played by the State Department of Health in relation to pneumonia control, was presented at each of these meetings.

The State Department of Health has a copy of the pneumonia film, in technicolor, available during the coming weeks for medical groups desiring to present the subject of pneumonia.

TULAREMIA IN IOWA  
Means of Transmission, Distribution by Occupation and Sex of  
275 cases as reported to the Iowa State Department of Health, 1933-1940

Transmission	Occupation	Sex	Percent of Total					Number	Percent
			.10	20	30	40	50		
Direct Contact 93.8 %	Hunting							3	1.1
	Dressing Animals	Males						146	53.1
		Females						104	37.8
	Fur Dressing								5
Indirect Contact								8	2.3
Tickbite								8	2.9
Catbite								5	1.8
Ingestion								1	0.4
Totals								275	100.0 %

PREVALENCE OF DISEASE

Disease	Jan. '41	Dec. '40	Jan. '40	Most Cases Reported from
Diphtheria	51	8	17	Polk, Webster
Scarlet Fever	257	333	361	For the State
Typhoid Fever	12	4	5	Scott, Crawford, Cass, Decatur, Keokuk, Mahaska, Pocahontas, Wapello
Smallpox	16	8	64	For the State
Measles	585	466	264	Dubuque, Buchanan, Delaware
Whooping Cough	80	123	24	Woodbury, Black Hawk
Brucellosis	22	16	22	Black Hawk, Cerro Gordo, Linn
Chickenpox	382	422	352	For the State
Influenza	2009	247	44	Woodbury, Washington, Clinton, C. C. C. Camp, Johnson, Clarke, Muscatine, Montgomery
German Measles	3	4	12	Dubuque, Washington
Mumps	447	235	249	Woodbury, Black Hawk, Scott, Appanoose
Pneumonia	460	274	253	For the State
Poliomyelitis	6	11	12	C. C. C. Camp, Delaware, Hardin, Polk, Pottawattamie, Sioux
Tuberculosis	40	77	48	For the State
Tularemia	6	14	38	For the State
Gonorrhea	144	103	172	For the State
Syphilis	320	206	267	For the State

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

LEE FORREST HILL, Editor.....Des Moines  
DENNIS H. KELLY, Associate Editor.....Des Moines

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## PENDING NATIONAL AND STATE MEDICAL LEGISLATION

The Seventy-seventh Congress convened in Washington on January 3, and the Iowa Legislature has been in session for some seven weeks. In both houses bills of interest, some vital and some not so vital, to the general medical profession have been introduced. Some of the more important of those bills are summarized in the following paragraphs. No bill in either legislation has been enacted into law as yet. Federal Legislative Bulletin No. 1, published by the Bureau of Legal Medicine and Legislation of the American Medical Association, is our source of information for the National Congress, and the Legislative Bulletin recently issued by the Committee on Public Policy and Legislation of the Iowa State Medical Society is our authority for Iowa.

### *Bills introduced in the National Congress*

S. 193 is a bill to make more adequate provision for compensation for the disability or death of workers from silicosis or other dust diseases by providing for cooperation with the several states.

S.195 is a bill which proposes that there be established in the United States Public Health Service a division of tuberculosis control. This bill would authorize for the fiscal year ending June 30, 1941, a federal appropriation not to exceed \$7,750,000; for the fiscal year ending June 30, 1942, a sum not in excess of \$33,500,000; and for the fiscal year ending June 30, 1943, a sum not exceeding \$37,000,000.

S.509 aims at making more adequate provisions for the control and prevention of industrial conditions hazardous to the health of employees to enable each state to carry out the purposes of the Act. This bill proposes a federal appropriation

for the fiscal year ending June 30, 1941, of \$1,000,000, for the year ending June 30, 1942, \$2,000,000 and for the fiscal year ending June 30, 1943, \$3,000,000. The Secretary of Labor will be charged with the responsibility of administering this act and all state plans must be approved by that federal official.

H.R.1007 is a bill to amend the Act approved August 5, 1937, entitled "An Act to provide for, foster and aid in coordinating research relating to cancer; to establish the National Cancer Institute; and for other purposes." This bill proposes a federal appropriation for the first year of its operation of \$2,300,000 to enable the United States Public Health Service to assist states and their political sub-divisions in the diagnosis, treatment and control of cancer.

H.R.584 is identical with the Wagner-George hospital construction bill which died in the Seventy-sixth Congress.

H.R.1074 is a bill sponsored by the American Association for Health, Physical Education and Recreation, and proposes to promote national preparedness and the national welfare through appropriation of funds (\$200,000,000) to assist the several states and territories in making adequate provisions through schools for physical education, including athletics, instruction and guidance in healthful living, wider recreational use of school facilities and the development of school camps.

H.R.1791 proposes to establish at the seat of the government an executive department to be known as the Department of Health at the head of which is to be a Secretary of Health, "a member of the medical profession". There will be transferred to this department, if the bill is enacted, the Food and Drug Administration, the Bureau of the Census, Division of Vital Statistics, the Freedmen's Hospital and St. Elizabeth's Hospital, the Children's Bureau, and all functions of the United States Public Health Service, Bureau of Narcotics, and the Health Department of the District of Columbia.

S.489 is a health insurance bill sponsored by the American Association for Social Security. It proposes a federal appropriation of \$50,000,000 for the fiscal year ending June 30, 1941, and thereafter annually a sum sufficient to carry out the purposes of the act, to induce states to embark on a combined program of compulsory and voluntary health insurance.

To those who recall the legislation sponsored in the Seventy-sixth Congress it will be apparent that no new bill comparable to S.1620, or more familiarly known as the Wagner Health Bill, has been introduced in this session. However,



Senator Wagner has publicly announced that a new bill is being formulated which will be in all respects like S.1620. The Federal Legislative Bulletin also states that "Announcement has been made, too, of a proposed bill to provide federally financed health care to every worker in essential defense activities. It is estimated that the plan will embrace, at the start, about 10,000,000 persons. While the proposal is yet in a formative stage, it has been suggested that although the government will pay the bills, the medical care will 'probably' be rendered by private practitioners, thus avoiding any controversy over 'socialized medicine.'"

#### *Bills Introduced in the Iowa Legislature.*

S.F.2 is a familiar bill which requires a physical examination as a prerequisite to the issuance of a marriage license. This bill requires a duly licensed physician to make a thorough physical examination and such standard microscopic and serologic tests as are necessary for the discovery of syphilis. The physician will be required to issue a certificate on a form prescribed by the commissioner of public health. This bill received the endorsement of the Executive Council of the Iowa State Medical Society at its meeting in Des Moines on February 9.

S.F.95 and H.F.122 are companion bills relating to the practice of pharmacy and dispensing of drugs and medicine. Section 17 of these bills relating to the medical professions, provides as follows: "Licensed physicians, osteopathic physicians, dentists and veterinarians may personally supply their own patients with such drugs and medicines as they may prescribe provided they prescribe and dispense drugs and medicines in compliance with the law as now provided for by their respective practice acts in Chapters 116, 119, 121 and 132, 1939 Code of Iowa."

S.F.97 is a bill dealing with an appropriation for administration of the narcotic act.

S.F.211 is a bill relating to optometry.

S.F.157 is a bill introduced by Senators Baldwin and Long having to do with the practice of chiropractic. The bill would extend the division of chiropractic to include the use of air, light, heat, cold, water, diet and exercise in the treatment of diseases. The bill also indicates that it would raise the educational requirements of chiropractic schools to a minimum of 3,600 class hours. However, this total is not broken down into the hours of study required for the various subjects taught.

There are other bills in both the national and state legislatures of a medical nature which we have not mentioned in this summary. We be-

lieve, however, those we have included will be sufficient to indicate that the problems of national defense and preparedness will not occupy the exclusive time of our legislators. One fear the medical profession may justifiably have is that some of these bills will not receive the amount of attention and debate they deserve, and may slip by and become enacted into law in the press and confusion of more weighty matters.

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#### THE MORTALITY RATE FROM APPENDICEAL PERITONITIS

In spite of all the emphasis that has been placed on the diagnosis of acute appendicitis, 15,000 persons die of this disease each year in the United States. The majority of deaths result from peritonitis due to perforation, the consequence of delay in diagnosis of the primary inflammatory condition. Inasmuch as the physician and the surgeon are so frequently confronted with the patient who already has a spreading peritonitis of appendiceal origin, it seems wise to review the management of this serious condition.

A recent summary of the management of spreading peritonitis of appendiceal origin by Calvin M. Smyth, Jr., of Philadelphia, records the experience gained from 696 cases with a mortality rate of 5.6 per cent. Although all surgeons will not concur with the author in all his principles of management, not many can boast of a mortality rate of 5.6 per cent in cases of perforated appendicitis. The Philadelphia surgeon emphatically believes in immediate surgery, regardless of the condition of the patient and the duration of the symptoms; even the critically ill patient with severe distention and marked toxemia is subjected to immediate operation. The McBurney incision is preferred and in his judgment the appendix should always be removed except in cases in which the appendix forms the wall of an abscess. If smears of the peritoneal exudate fail to show extracellular organisms, the abdomen may perhaps be closed without drainage; however, drainage is recommended and the author employs Penrose drains to the site of the appendix and to the lateral gutter, and a soft rubber tube to the cul-de-sac.

However, the removal of the appendix and the institution of drainage are not sufficient. The important factor in the recovery of the patient with peritonitis is the postoperative care. The maintenance of the fluid and electrolyte balance by venoclysis is fundamental. Nothing is given by mouth for at least forty-eight hours. From three to four liters of fluid are given by venoclysis in the first twenty-four hours; one liter of five per

cent glucose in normal saline is followed by two liters of five per cent glucose in distilled water. After the first twenty-four hours the amount of parenteral fluids administered depends on the output, and this includes urinary output, loss through suction from the duodenal tube, and the incalculable loss. Daily blood chloride determinations should be made in order accurately to correct a hypochloremia.

In prolonged periods of starvation and parenteral administration of fluids, the possibility of a lowered serum protein must be constantly kept in mind. The accepted critical level of blood proteins is 5.5 grams per 100 cubic centimeters, and if depressed below this level, characteristic symptoms ensue—edema of superficial tissues, delayed gastric emptying due to edema of the pylorus which causes vomiting, and delayed wound healing. Blood transfusion, the infusion of pooled human serum or preferably lyophile serum help to correct the condition.

The mechanical decompression of the bowel by duodenal intubation and siphonage according to Wangenstein, or low suction by means of the Miller-Abbott tube, is routine. Distention must be relieved. Sulfanilamide, according to Smyth, has proved its efficacy in peritonitis due to the colon bacillus or the streptococcus, and has a definite place in the therapy of peritonitis. Morphine should be given liberally during the first two or three days. All drugs given to reduce distention by stimulating peristalsis are absolutely contraindicated. Nothing should be permitted by mouth until peristalsis is audible and then should be started cautiously. Fruit juices and milk are not well tolerated. Enemas should not be given.

In spite of the fact that surgeons may not agree in all respects with the principles of management as outlined by Smyth, most operators will admit an envy of his mortality record. It is particularly in the postoperative management that the average patient is neglected. Observance of the principles of postoperative care which are based on sound physiologic facts, as outlined by the Philadelphia surgeon, will contribute materially to a reduction in the mortality rates from peritonitis of appendiceal origin.

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#### NATIONAL CONFERENCE ON MEDICAL SERVICE

The National Conference on Medical Service, an outgrowth of the former Northwest Regional Conference, was held in Chicago, February 16, 1941. Representatives from many states were present, with twelve from Iowa. Officers of the 1941 Conference were Dr. Forrest L. Loveland

of Topeka, Kansas, president; and Dr. Harold M. Camp of Monmouth, Illinois, secretary. We feel that the program was sufficiently interesting and timely to receive detailed attention in the JOURNAL. The problems under discussion are those which confront all active state and county medical societies, and this resumé of the topics presented at the conference will, we believe, prove worthwhile to our members.

#### Voluntary Group Medical Care Programs

The first symposium dealt with voluntary group medical care programs. Mr. J. D. Laux, executive director of the Michigan plan, gave interesting facts and figures on the first year of operation of the plan in Michigan. The demand was greatest for the limited service plan for surgery only. The cost to the single individual for this coverage is 40 cents a month; of this 23 cents has gone for service in the first year; ten cents for administration; four cents for reserve; and the balance of three cents is retained for future emergencies. The average cost of service for each case was \$47.00; the ratio of service calls was six for every one thousand members each month. For the past four months families have been enrolled in a surgical plan. The cost for this service is 52 cents per subscriber; 46 cents have been expended for service, eight cents for administration, with a deficit of two cents. However, it is believed that the plan will prove feasible in the future, since the greatest demands come in the first five months of any program. After the first year, the maternity benefits may offset some of the decrease in regular calls. Five thousand persons have been enrolled in the medical service plan. Of the \$1.43 for each subscriber, the sum of \$1.24 has been paid for services and nine cents for administration, leaving a balance or surplus of ten cents. The average bill for persons receiving service was \$16.00, and 110 persons out of 1000 asked for service each month. The subscriber, however, paid the first \$5.00 of the charge for service, and it is felt that this is the only sound method to be followed in a medical service plan. As a result of the first year's experience, Mr. Laux stated he had found four things necessary: first, the plan must be sold to the doctor by individual contact; second, there is a need to increase the enrollment in rural areas; third, a study should be made of the call for services in certain of the specialties, and basic principles of procedure laid down; and fourth, an analysis of the various plans for service is essential.

Mr. George Crownhart, Executive Secretary of the State Medical Society of Wisconsin, spoke of the three experimental plans tried in Wisconsin.



The object of the three experiments was to determine whether a high standard of medical service could be maintained through an insurance plan, and the results were disappointing. The fees were not sufficient to cover the cost of the service in two of the plans; the lay public was opposed to paying higher fees but preferred limited medical service; the physicians felt that the higher standards should be maintained. The third plan failed because there was no demand in the county for the service after it was once established. Results in Wisconsin, therefore, have been discouraging in one sense, although some value may be gained from the experience.

### Medical Preparedness

Dr. Roy W. Fouts of Omaha was in charge of this symposium, and Dr. Morris Fishbein was the first speaker on what is, perhaps, the most important problem of the medical profession today. The government cannot conduct any type of military activity without the help of the medical profession. There are 6,000 selective service boards, each of which has a physician examiner. There are many district advisory boards consisting of specialists who may be called upon by local boards. There are also 100 induction centers which are calling upon civilian specialists for help in examining the men inducted into service. The military defense program will need 8,000 doctors a year for the five year period to care for the men in service. There are between 5,200 and 5,300 graduates from medicine each year; of these possibly 3,500 will have to take a year of military service. Sixty per cent of the physicians graduated in 1937 are still in hospitals as residents. All of these cannot be called into service without crippling the hospitals. Mr. Dykstra, head of Selective Service, has suggested a ten per cent increment in medical students, but he does not realize that these students would not be available until 1946. Furthermore such an increase would necessitate new endowments and enlarged teaching personnel and facilities, at a time when it is exceedingly difficult to maintain the usual standards. In addition to the physicians needed in the army camps, 5,000 physicians will be needed for full time industrial work. The government has not deferred service for internes and residents, and there is a need for greater coordination between national Selective Service headquarters and the local boards.

The scientific phase of military medicine was to be handled by the National Research Council, and a commission was established but not given any money. It has less than \$100,000 to engage in necessary conferences and research essential to a

military program. Medical care of the air phase of military defense has been sadly curtailed, and is directly reflected in some of the accidents which have occurred. Ninety-five per cent of the aviation accidents have been due to physical aspects, and only five per cent to mechanical. The government has asked for 50,000 quarts of dried human plasma. This necessitates 6,000,000 donors. There are only five machines in the country which can make this plasma, and by running twenty-four hours a day, they could prepare 1,000 quarts per week. Thus we can obtain some idea of the immensity of the program and the handicaps which beset it.

It has been recommended that a commission of five competent physician specialists, independent of the army, be created for use in emergencies. The American Medical Association has spent much money in assembling information about available physicians, and when the time comes will be able and ready to give the cooperation desired.

Colonel Leonard Rowntree, M.D., Chief of the Medical Division of the Selective Service System, Washington, D. C., reported that there were 18,000 doctors and 200,000 individuals participating in the work of the selective service system, 90 per cent of them on a voluntary basis. The great need is for better selection of conscripted men. Mistakes cost a colossal amount of money. The medical advisory boards must be called upon more and more to avoid taking men who are not physically or mentally fit for service. Colonel McDowell of the Sixth Corps Area mentioned the need for detecting psychopathic personalities and eliminating them. Colonel Armstrong of the Illinois Selective Service spoke of the need for more personnel and equipment, and the inclusion of dentists in the program. He stressed the need for more stringent examinations by the local boards, and mentioned the blow to the morale of men who leave for service only to be rejected at the induction center. Colonel Hutter, liaison officer at the American Medical Association said the Surgeon-General of the Army was responsible for the health of the army. This is not a difficult task in times of peace, but is extremely difficult in times of war. There are 15,000 medical reserve officers in the United States, 3,500 of them now on duty. More will be called. When that pool is exhausted the army will call upon the American Medical Association for assistance in furnishing physicians for this service without endangering the needs of the civilian population.

### Postgraduate Programs

Postgraduate programs now in operation in Kansas, Minnesota and Illinois were described.

The outstanding feature of this phase of medicine is its increasing popularity and the numerical growth of physicians who are anxious to take advantage of continued study. The number enrolled in postgraduate courses throughout the United States is only another indication of the enlightened and progressive position of American medicine.

#### Medical Legislation

National legislation in the public health field includes the following bills: to establish a division of tuberculosis control in the United States Public Health Service; to establish commissions for doctors and dentists; to deal with industrial hazards and tuberculosis among migrants; to appropriate money for cancer research; to allow chiropractors to treat federal employees under the compensation act; to establish a department of health, the secretary of which is to be a member of the medical profession; and to enlarge the facilities of veterans' hospitals. Attention was called to the fact that the majority of federal laws tend toward socialization of medicine.

#### Medical Care of Social Security Clients

Mr. Walter F. Finke, director of the Minnesota Division of Social Welfare, explained that there had been a patchwork of welfare programs in Minnesota, until both the welfare agencies and the medical profession realized they needed an adjustment of all the efforts into an integrated pattern of social welfare. Accordingly, the Division of Social Welfare was created two years ago with a medical unit headed by a medical man. Every welfare program has some medical significance, and this is realized in Minnesota. The medical unit is responsible for developing and promoting sound programs in medical research, and it serves all the state agencies which deal with medical programs. Under this heading are old age relief clients, dependent children, general relief and WPA clients, etc. Medical care of all these groups is given to the recipient on the basis of individual needs and problems, and is an integral part of all relief. Administrative authority is decentralized, being vested in integrated county boards. The state has a medical advisory committee of five members; technical subcommittees deal with special fields of medicine. County medical advisory committees of three members are an essential part of the county board. Every bulletin which is prepared by the state committee or division is released by the state medical advisory committee to the 87 county advisory committees, and by the state welfare division to the 87 county boards, so that both groups have the same information and can work together in harmony. The plan is func-

tioning satisfactorily for all persons concerned.

Dr. Alfred W. Adson of Rochester, Minnesota emphasized the fact that physicians are attempting to cooperate with the State Department of Social Welfare, and that the director is willing and anxious to cooperate with the medical profession. The plans for administering medical relief are not uniform throughout the state. There are county plans and township plans, of which the county plan is preferable. Under this a certain sum may be allocated on a unit basis, or by applicant, who is given free choice of physician. The plan of having a county physician is the least satisfactory of all. The best plan for the physicians seems to be one in which they will accept a fixed sum. This usually avoids conflicts over payment for services. Control is necessary, and adjudication of all disputes is made through the medical advisory boards. Both parties submit to an unbiased hearing. Appeals may be made to the Director of the State Division of Social Welfare, and he confers with the state medical advisory board in making a decision. Relief funds are withheld until the complaints are adjusted.

The final paper of the conference was presented by Mr. C. H. Wantz, president of the Medical Exhibitors' Association, who discussed the annual meetings from the standpoint of the exhibitor. He stated the position of the commercial companies in determining which meetings might be attended, calling attention to the number of meetings scheduled each month, the difficulties involved in shifting exhibit material from one state to another and the discrepancies in charges for space and in facilities.

New officers of the organization, elected at the noon luncheon, are Dr. Harold M. Camp of Monmouth, Illinois, president; and Dr. J. D. McCarthy of Omaha, Nebraska, secretary. The next meeting will be held at the Palmer House in Chicago, Sunday, February 15, 1942.

### NINETIETH ANNUAL SESSION IOWA STATE MEDICAL SOCIETY

Davenport, Iowa

May 14, 15, 16, 1941



### CONGRESS ON INDUSTRIAL HEALTH

Since the organization of the Congress on Industrial Health by the American Medical Association some three years ago, many state medical societies have followed suit in appointing active state committees on industrial health to develop and maintain the interest of the practicing profession in preventive industrial medicine and surgery. Iowa, unfortunately, cannot be classed with those states who are actively participating in this important phase of the practice of medicine.

Discussion on the subject in our House of Delegates centered on the need of such a state committee, but the House did not appoint one. However, the Council of the Iowa State Medical Society selected three of its members to study the question: Dr. James E. Reeder of Sioux City, chairman; Dr. James G. Macrae of Creston, and Dr. Charles H. Cretzmeyer of Algona. The Third Annual Congress on Industrial Health was held in Chicago, January 13 and 14, and Dr. Reeder has written the following interesting account of this session.

"Throughout the entire meeting, the responsibility of organized medicine in solving problems in industrial health and hygiene, was emphasized, particularly in regard to the shortage of qualified industrial physicians. There are only about 1,200 qualified industrial physicians in the United States, and because of the rapid expansion of industry due to the rearmament program the problem of furnishing this type of specialist is indeed acute. Only a few medical schools have a department on industrial health and hygiene whereby physicians interested in this work could be properly trained. There is also a shortage of qualified industrial surgeons, engineers and hygienists. It is, therefore, obvious that organized medicine must face this problem immediately.

"This fact is brought rather forcibly to one's mind from the brief report of the National Safety Council; 96,500 persons were killed in accidents in the United States during 1940, and another 9,100,000 were injured. The estimated economic loss, including medical expense, property damage, lost wages and the overhead of insurance, is \$3,500,000,000. The death rate was four per cent higher than it was in 1939, about 4,000 more lives being lost in 1940 than in 1939. Of particular interest are the figures on deaths from industrial accidents; 17,000 in 1940 as against 15,500 in 1939, or an increase of ten per cent compared with the general increase of four per cent of all accidents. This is due to increased activity in all fields, and is largely attributed to national defense. This increased rate of industrial accidents

need not be accepted as an inevitable accompaniment of national preparedness, however, since successful accident prevention has often been achieved in the face of increased exposures.

"Conservation of national man power, especially in defense industry, must be a major objective of the National Safety Council program this year. Accidental deaths among men of the selective service age bracket, from twenty-one to thirty-five years, totaled approximately 14,000, which is equal to a full army division."

The Council on Industrial Health of the American Medical Association was established to focus attention from all elements in the medical profession on these problems. For identical reasons, committees are being organized in the various states, to cooperate with the national group and coordinate activities. A program has been developed as a guide to these state committees with the following well-defined objectives:

1. To train industry and labor to the value of industrial health conservation.
2. To develop a clear understanding of the proper scope and functions of industrial medicine and to clarify relationships between private and industrial practice.
3. To keep the medical profession informed about all accepted methods for reducing the frequency and severity of industrially induced disability.
4. To elevate medical relations under workmen's compensation.
5. To scrutinize all legislation affecting the health of industrial workers.
6. To improve relationships between medicine and insurance.
7. To establish working relationships with all agencies in the state interested in industrial health.
8. To arrange for the adoption of similar activities through cooperating committees in the medical societies of the industrial counties.

To accomplish these objectives it has been recommended that the personnel of the state committees include representation from:

1. Private practice.
2. Industrial medical practice.
3. Medical representation if such exists from the following:
  - a. State bureau of industrial hygiene.
  - b. State workmen's compensation agency.
  - c. Medical faculties in the state.
  - d. Industrial insurance company.

While the problem of industrial health is not, perhaps, as acute in Iowa as in many states, it is nevertheless of sufficient importance to demand serious consideration. The question is receiving national attention, as evidenced by the introduction of S. 509 in Congress, which calls for appropriations totaling \$6,000,000 during the next three years for the control and prevention of industrial conditions hazardous to the health of employees. The impetus for improving industrial health standards and the means by which these improvements can be accomplished should come from organized medicine, and the leadership for this vital task in Iowa should be assumed by the Iowa State Medical Society.

#### MEDICAL PREPAREDNESS\*

The Committee on Medical Preparedness of the Iowa State Medical Society has completed what is possibly the most important of its functions, namely, the determination of which physicians in the state should be exempt from military service. On December 20, the Committee wrote to all county committees on medical preparedness, asking them to survey their society and determine which physicians could be spared, and which ones should be exempt from service to carry on the work in the community. Eighty-three county societies cooperated and furnished the necessary information. It was necessary for the state committee to use its own judgment for the remaining fourteen who did not reply. The standards on which the determinations were made were set forth in the January JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. The majority of the county committees did an excellent piece of work in making their reports, and their recommendations were given full consideration by the state committee.

In addition to certifying the exempt physicians, the committee also reviewed the list of medical reserve officers in the state and determined who could be spared for service and who should be left to serve the community. It was guided in this by the county committee reports. There are 15,000 medical reserve officers in the United States, 3,500 of whom have been called to duty. Others will be called, and when this supply is exhausted, the War Department will turn to physicians in civilian life to help in its work. It will then be guided by the lists which have been furnished by the state committees on medical preparedness. Your committee has done this work to the best of its ability, aided by the conscientious and scrupulous reports from the county committees.

\*From the Committee on Medical Preparedness.

#### ANNUAL MEETING OF THE IOWA TUBERCULOSIS ASSOCIATION

The Twenty-sixth Annual Meeting of the Iowa Tuberculosis Association will be held at the Fort Des Moines Hotel, Des Moines, on March 27 and 28. A cordial invitation to attend the sessions is extended to all interested physicians.

Medical section meetings will begin at 9:30 a. m. on Thursday, March 27. Three papers on medical and surgical treatment and x-ray diagnosis will be presented at the Thursday morning session. Henry C. Sweaney, M.D., pathologist of the Municipal Tuberculosis Sanitarium, Chicago, will speak on "Trends During the Past Decade in the Management of Tuberculosis" at a joint noon luncheon. A clinico-pathologic conference, in which Dr. Sweaney will participate, will be presented in the afternoon. The program committee states that this conference, which will be a departure from the usual form of meeting, should be interesting and instructive.

A symposium on "Examination of Groups of Apparently Healthy People" will be presented from 9:30 a. m. to 12:00 noon on Friday, March 28. The speakers and their topics are: L. S. Jordan, M.D., superintendent, Riverside Sanatorium, Granite Falls, Minnesota, "Finding the Source and Breaking the Contact"; William H. Oatway, Jr., M.D., Wisconsin General Hospital, Madison, "Tuberculosis Case-Finding Results Among Hospital Entrants and Personnel"; Charles E. Lyght, M.D., Carleton College, Northfield, Minnesota, "A Challenge to Iowa Colleges". F. P. Winkler, M.D., Sibley, will preside at this session. Discussors include R. J. Connor, assistant administrator, University of Iowa Hospitals and president of the Iowa Hospital Association, and Max Durfee, M.D., Iowa State Teachers College, Cedar Falls.

The Program Committee for the medical sessions consists of C. E. Harris, M.D., Grinnell; A. D. Woods, M.D., State Center; Fred Sternagel, M.D., West Des Moines; Thomas A. Burcham, M.D., E. E. Kottke, M.D., John Russell, M.D., Erwin Schenk, M.D., and C. K. McCarthy, M.D., chairman, Des Moines.

#### TUBERCULOSIS ASSOCIATION ENDORSES EXAMINATIONS

Of interest to the medical profession is the following resolution recently adopted by the Executive Committee of the Iowa Tuberculosis Association:

"The Iowa Tuberculosis Association endorses the examination for tuberculosis of all teachers and other school employees. The examination should include a tuberculin test and a chest x-ray if the reaction to the test is positive. School employees with active tuberculosis should not be permitted to continue in their duties but should be re-employed upon satisfactory proof of recovery. Boards of education, county medical societies, health units and local tuberculosis associations are urged to encourage and support such examinations."



# SPEAKERS BUREAU ACTIVITIES

## WEEKLY RADIO BROADCASTS

The Speakers Bureau has inaugurated for a trial period a new type weekly radio program over broadcasting station WOI, Ames, Iowa. Our medical talks are now incorporated in a thirty minute program of organ music played by Mr. Howard Chase of the Department of Music at Iowa State College. By this means we hope materially to increase our audience and thus make more worthwhile the time and effort expended by various physicians throughout the state who so generously prepare and, frequently broadcast the talks for us. We believe we will have a more consistent audience by this means, and we are confident the physicians who deliver their own talks will find that a program of this nature lends itself more effectively to the individual address.

This new program necessitates a slight change in time, and the broadcast is now carried over WOI on Wednesdays from 2:05 to 2:35 p. m. The weekly program over WSUI in Iowa City remains unchanged and goes on the air each Tuesday at 1:30 p. m.

## SCOTT COUNTY POSTGRADUATE MEDICAL COURSE

The Scott County Medical Society, in cooperation with the Speakers Bureau, has arranged a series of postgraduate medical lectures to be held in Davenport this fall. The dates and speakers have been definitely scheduled as follows:

- September 2 (Subject to be announced), Carl V. Moore, M.D., Assistant Professor of Medicine, Washington University School of Medicine, St. Louis
- September 18 Pituitary Disorders and Their Endocrine Treatment, Elmer L. Sevringhaus, M.D., Professor of Medicine, University of Wisconsin Medical School, Madison
- October 7 Pain Relief in Labor—The Management of Some Common Complications of Pregnancy, John W. Harris, M.D., Professor of Obstetrics and Gynecology, University of Wisconsin Medical School, Madison
- October 23 (Subject to be announced), Max M. Peet, M.D., Professor of Surgery, University of Michigan Medical School, Ann Arbor
- November 4 (Subject to be announced), Kellogg Speed, M.D., Clinical Professor of Surgery, Rush Medical College, University of Chicago, Chicago

Dr. James Dunn of Davenport, local chairman of this postgraduate medical course, plans to mail printed announcements as soon as the program is completed. The entire final draft of the program will be carried in a later issue of the JOURNAL.

## SPIRIT LAKE POSTGRADUATE MEDICAL COURSE

The postgraduate medical course in Spirit Lake was opened at a meeting on February 18, at which time Dr. Richard F. Birge of Des Moines presented Common Laboratory Procedures and Their Significance. The meeting was well attended, but due to the excessively cold weather many physicians were unable to be present. However, these men can still enroll for the course at the next meeting, which is scheduled for Tuesday, March 18, at 6:30 p. m. at the Antlers Hotel in Spirit Lake. Dr. Fred L. Knowles of Fort Dodge will give the lecture that evening and will discuss Common Fractures and Their Treatment. Dr. F. L. R. Roberts, program chairman, urges the physicians in the surrounding counties to plan now to be present for the meeting on March 18.

## MARSHALL COUNTY POSTGRADUATE MEDICAL COURSE

The Marshall County Medical Society will hold its March postgraduate medical lecture on Tuesday, March 4, at 6:30 p. m. at Hotel Tallcorn in Marshalltown. Dr. Jerome R. Head, Assistant Professor of Surgery at Northwestern University School of Medicine in Chicago, will speak on Chest Injuries. This will be one of the outstanding lectures in the series and Dr. Raymond S. Grossman, program chairman, extends a cordial invitation to all physicians in that vicinity.

## BOONE-STORY POSTGRADUATE MEDICAL COURSE

The Boone and Story County Medical Societies will have as their guest for the March meeting Dr. Charles D. Creevy, Assistant Professor of Surgery and Urology at the University of Minnesota Medical School in Minneapolis. Dr. Creevy will discuss Urology in General Practice. The meeting will be held Thursday, March 27, at 6:30 p. m. at the Holst Hotel in Boone and all physicians in that locality are urged to attend.

## RADIO SCHEDULE

- WSUI—Tuesdays at 1:30 p. m.
- WOI—Wednesdays at 2:05 p. m.
- March 4-5 Care of the Teeth, C. E. Chapman, D.D.S.
- March 11-12 Physiology of Blood, Lee E. Rosebrook, M.D.
- March 18-19 Back Injuries, Dwight C. Wirtz, M.D.
- March 25-26 Cancer—Fighting It with Knowledge, M. C. Hennessy, M.D.

## WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*  
5822 North Waterbury Road, Des Moines

*President*—MRS. ELBERT T. WARREN, Stuart

*President Elect*—MRS. W. R. HORNADAY, Des Moines

*Secretary*—MRS. FRED MOORE, Des Moines

*Treasurer*—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

### MENTAL HYGIENE

Mrs. E. T. Butterfield, Dallas Center

Aesculapius, the Greek god of medicine had a daughter, Hygeia, who was the goddess of health. Mens is the Latin word for mind, so our words mental hygiene pertain to the attainment of a healthy mind. It is a growing knowledge of technics for the purpose of understanding the evolution of human personality so as to give the best development and integration possible at each age level. It entails the study, treatment and prevention of the emotional and behavior disorders which so commonly rob us of a happy and effective life.

Because of the great complexity of human personality, mental hygiene is a mosaic of sciences; of biology and medicine, for personality is a part of an organism subject to the laws of physical development and to a host of physical disorders which may affect it; of psychiatry, through the intensive case study and treatment of patients suffering from serious mental disease and from personality and behavior disorders; of sociology, since personality is also a product of environmental influences of school, home, neighborhood and community; of anthropology, since it has thrown light on the past history of the human institutions which mold personality today; of eugenics and eugenics, since they have given knowledge of human heredity and of conditions of nurture which promote or hinder higher forms of human life; of the psychology of religion and esthetics, since they have contributed to the understanding of religious and artistic impulses and expressions of personality.

When did mental hygiene originate? Back in 4000 B. C. the first physician of whom we have any historical record held the title, among others, of "Master of Secrets" and "Bringer of Peace", so he must have restored some people not only physically but mentally back to health. Both the Greeks and Egyptians very definitely recognized nervous and mental disorders, and as early as 1000 B. C. Homer very accurately described cases of mental illness. Hippocrates even taught that it was more important to know what sort of an individual had a disease than to find out what disease the individual had. The Jews very clearly recognized nervous disorders and forms of insanities. All through the Old Testa-

ment allusion is made to these psychic disturbances, specific mention being made of the mental troubles of Saul, David and Nebuchadnezzar. During Christ's time the New Testament records show clearly that hysteria, epilepsy and insanity were looked upon as possessions of evil spirits. The first hospital for mental illnesses was established in Byzantium in 310 A. D.

During the Middle Ages nothing much was done about mental hygiene. The priests generally cared for the insane, but in the tenth century the former kindness shown to mental cases turned to torture. In the twelfth century treatment became mixed with astrology and religion, and in the fifteenth century was followed by the development of witchcraft superstition. In the seventeenth century progress in research began, which developed in the nineteenth century to the patent medicine era. John Long's liniment in England was an example. It cured so many patients that Parliament bought the formula to give to the public. It thereafter appeared in the British Pharmacopeia, but it had somehow lost its efficacy. From these days electricity, weapon ointments and sympathetic powders went on curing the sick as long as they believed in them. Many believed that tuberculosis of the lymph glands, called King's evil, could be cured by the King's touch. Then it was hypnotism which was a cure-all and soon came our scientific psychology and psychiatry.

It was a man named Clifford Whittingham Beers of New Haven, Connecticut, who finally brought about the establishment of a national movement of mental hygiene. Mr. Beers passed the usual childhood but his whole life was altered when he entered Yale University. It was at this time that his brother was stricken with a brain tumor. Clifford spent much time with his brother in the next six years, and during this time began to think he also might be afflicted. After three years when this developed into an obsession he collapsed mentally and underwent the delusion that he did have the tumor with all its accompanying symptoms. Since he preferred death to that condition he attempted to commit suicide by leaping from a fourth story window. He survived, but his barred window at the hospital started the delusion that he was a prisoner to be tried for some crime. This lasted two years, yet he finally recovered his mental powers and devoted his



life to the idea that he had conceived while a patient in an institution—the proper care of the insane. From a national movement it became worldwide and today thousands of agencies over the world aid in the program of mental hygiene.

What is the value of mental hygiene? Statistics tell us that one out of every twenty human beings has been or sometime will be in a hospital for mental disorders. Every twenty-four hours 7,000 babies are born in the United States. Of these one out of twenty-five will become insane; four will become profoundly neurotic; eight will be moderately neurotic and twelve will become fairly normal. I say "fairly" because we speak only theoretically of normal beings. The story is told about a man who was visiting an insane asylum and asked one of the inmates why he was there. The man replied, "Well, I thought everybody around me was crazy, and they thought I was crazy. Since the majority rules, here I am." Actually the normal man is merely the average man. The neurotic people are those who attempt to flee from a reality that is unpleasant. The psychotic persons are those who deny some phases of reality and are thus called insane. The stock example is the insane man who declares himself Napoleon. He actually believes himself to be that man. The neurotic John Jones, finding his home life unpleasant, perhaps because his wife is too tyrannical and underestimates his abilities, develops severe headaches which cause his wife to become solicitous about his condition. She waits on him hand and foot and makes him the center of household interest. This is only a beginning, because Jones enjoys his position so much that the headaches may come at closer intervals and eventually other symptoms may present themselves.

Insanity is on the increase. During the last fifty years it has increased about 300 times faster than the population. This increase is due to various factors: because the diagnosis of these disorders is more discriminating today we call more people insane than formerly. Many persons who in past generations were only labeled as "queer" are today pronounced insane. There is also a greater tendency to institutionalize these people and thus it is easier to count noses. Then too, there has occurred during the past fifty years a great increase in the average length of life, more people living to the age at which certain types of mental breakdowns commonly occur. There is also an increase in urban population and certain types of neurotically predisposed individuals are more likely to break down under pressure of strenuous city life.

The problem of the pre-insane, the victims of neuroticism, is equally serious. Aside from surgery, accidents and contagious diseases probably 85 per cent of all hospital patients are more or less neurotic. For every case of real mental breakdown (insanity) there are ten of psychoneuroticism, five being severe and five ranging from moderate to mild. There are, therefore, about 750,000 nervous breakdowns each year of which one-third are those of

chronic ailers, one-third have to stay away from work anywhere from six weeks to six months, and the remaining 250,000 are away from work from six months to a year or longer. What does this cost the nation in taxes and economic loss? It is safe to estimate that the cost of the two combined far more than equals that from all other diseases and disorders taken together. From one-sixth to one-third of every state's expenditure is for support of mental hospitals, and there are more mental patients in public institutions than there are students in our colleges and universities. It appears, therefore, that mental hygiene constitutes the major social problem of modern times. If America is to escape the doom of the nations of old we must breed good Americans. It is said today that three-fourths of the next generation are being produced by the inferior one-fourth of this one. This is a challenge from a mental hygiene standpoint as well as from the physical side. Mental and nervous diseases are not directly inherited as such. They behave very much as do tuberculosis and cancer, in that they tend to appear more frequently in certain families and less so in others. As with tuberculosis and cancer, it probably requires the influence of the more immediate exciting causes to bring about their development and full-fledged appearance. It is, therefore, important that we as adults be more perfectly adjusted to life, not only for our own benefit but for those around us—our mates, our children and our friends.

(To be concluded next month)

#### LEGISLATIVE NOTES

Several bills in the Iowa legislature are of interest to the Woman's Auxiliary, but the one which is demanding most of our attention at the present time is the premarital bill. This was the second bill introduced into the Senate; it has now passed that body and is in the House. This is a well worded bill and has the support of the Iowa State Medical Society. It is not restrictive in its phraseology, and will give Iowa a much better law than many other states with similar legislation. Members of the medical profession are urging its passage, and the Auxiliary will undoubtedly want to add its influence to that of the other groups which are sponsoring it.

Mrs. Charles Ryan, Chairman  
Legislative Committee.

#### Dallas-Guthrie Auxiliary

The Woman's Auxiliary to the Dallas-Guthrie Medical Society met in regular session on Thursday January 16, 1941 in Adel. Mrs. Marion H. Brinker, president, presided. The annual reports of officers were read, and the following officers for the ensuing year were elected:

President, Mrs. C. E. Irwin, Woodward.  
President elect, Mrs. C. A. Nicoll, Panora

First vice president, Mrs J. M. Margolin, Perry.  
Second vice president, Mrs. E. T. Butterfield,  
Dallas Center.

Secretary, Mrs. K. M. Chapler, Dexter

Treasurer, Mrs. W. V. Thornburg, Guthrie Center.

The organization voted to have yearbooks for 1941-1942 which are to include the list of members, programs, party dates and the county constitution. Dues were received, party dates were set, and constitutional revisions were discussed. Mrs. E. J. Butterfield read an excellent paper on "Recent Chemical and Industrial Developments and Their Relation to Medicine."

Mrs. K. M. Chapler, Secretary

#### Pottawattamie County

The Woman's Auxiliary to the Pottawattamie County Medical Society met Wednesday evening, February 12, for a six-thirty dinner at the home of Mrs. I. Sternhill in Council Bluffs. Mrs. Sternhill was assisted by the following committee: Mesdames Robert Moth, M. C. Hennessy, S. D. Maiden, J. L. Stech and Walter P. Hombach, past presidents of the Auxiliary.

In addition to the dinner and social hour, a short business meeting was held, in which \$5.00 was allocated for the Eighth Annual Health Essay Contest sponsored by the Woman's Auxiliary and the Speakers Bureau of the Iowa State Medical Society.

In the election of officers for the current year Mrs. Grant Augustine was named president to succeed Mrs. A. A. Robertson. Other officers are Mrs. F. E. Bellinger, vice president; Mrs. E. C. Weir, secretary; and Mrs. A. V. Hennessy, treasurer.

Mrs. E. C. Weir, Secretary

#### Scott County

Members of the Scott County Medical Society graciously arranged a luncheon at the Outing Club in Davenport, Tuesday, February 11, for their wives, at which time Mrs. E. T. Warren of Stuart and Mrs. W. R. Hornaday of Des Moines, president and president elect respectively of the Woman's Auxiliary to the Iowa State Medical Society were invited guests. Plans were made for the coming annual session of the State Auxiliary to be held in Davenport, May 14 to 16, 1941.

### Annual Meeting

Hotel Mississippi will be the headquarters for the Annual Meeting of the Woman's Auxiliary to the Iowa State Medical Society to be held in Davenport, May 14 to 16, 1941.

Complete program next month

## DO YOU KNOW

That now is the time to check up on those oft-ignored chronic diseases?

That the members of your own family who may have suffered from sore throat, tonsillitis, colds, influenza or scarlet fever this winter should be examined to determine if they are free from any heart or kidney complications?

That adequate bed rest during and following acute infections is one of the most important factors in the prevention of these complications?

That failure to care for these complications may result in the development of chronic disability early in life?

That easy fatigue, frequent headaches and pallor may be signs or symptoms of nephritis or heart lesions?

That the use of convalescent immune serum in scarlet fever is apparently reducing complications in this disease?

That the use of some of the sulfonamide derivatives, where indicated, is reducing the severity and complications of many acute infections?

That you should have a complete physical examination annually as a means of discovering and checking incipient diseases?

That hypertension may be inherited, and while it is too late for you to choose your ancestors, you can warn your children of the dangers of passing on such a heritage?

#### NATIONAL CONVENTION

Hotel Carter will be the headquarters for the Annual Meeting of the Woman's Auxiliary to the American Medical Association which will be held in Cleveland, June 2 to 6, 1941. Requests for reservations should be sent immediately to Dr. Edward F. Kieger, Chairman of the Committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland, Ohio.

#### NEW AUXILIARY ORGANIZED

The Organization Committee, under the leadership of Mrs. W. R. Hornaday, is happy to announce the formation of another auxiliary to the state and national groups in Hardin county. Officers of the new auxiliary are Mrs. Grace Potter Miller of Ackley, president; Mrs. R. R. Gaard of Radcliffe, vice president; Mrs. F. W. Houlihan of Ackley, secretary; and Mrs. J. W. Caldwell of Steamboat Rock, treasurer. Membership will comprise the wives of physicians practicing in Hardin county.



## SOCIETY PROCEEDINGS

### Audubon County

Newly elected officers of the Audubon County Medical Society include Dr. R. H. Payne of Exira, president; Dr. Peder Soe of Kimballton, vice president; Dr. Peder J. Bursheim of Exira, secretary and treasurer; Dr. W. H. Halloran of Audubon, delegate; and Dr. P. E. James of Elkhorn, alternate delegate.

### Bremer County

The combined monthly meeting of the Bremer County Medical Society and the staff of St. Joseph's Mercy Hospital, was held Monday, February 24, at the Fortner Hotel in Waverly. Following dinner, a transcription, Diseases of the Heart: Diagnosis and Treatment, by Hugh B. McCulloch, M.D., associate professor of clinical pediatrics, Washington University School of Medicine, St. Louis, was presented.

P. K. Graening, M.D., Secretary

### Cerro Gordo County

James S. McCartney, M.D., associate professor of pathology, University of Minnesota Medical School, Minneapolis, was guest speaker for the Cerro Gordo County Medical Society at the meeting held Tuesday, February 11, in Mason City. Dr. McCartney spoke on Some Interesting Information on Pulmonary Embolism. The local paper was Malta Fever, presented by Harry G. Marinos, M.D., of Mason City.

C. O. Adams, M.D., Secretary

### Fremont County

The annual meeting of the Fremont County Medical Society was held at the Hotel Sidney in Sidney, Thursday, January 30. Members were guests of Dr. Kenneth Murchison. Officers were elected for 1941 as follows: Dr. Ralph Lovelady of Sidney, president; Dr. Kenneth Murchison of Sidney, vice president; Dr. A. E. Wanamaker of Hamburg, secretary and treasurer; Dr. Murchison, delegate; and Dr. L. A. Baldwin of Riverton, alternate delegate. After the business meeting there was a round table discussion of an interesting case in the practice of each member.

A. E. Wanamaker, M.D., Secretary

### Greene County

The regular monthly meeting of the Greene County Medical Society was held at the Hotel Lincoln in Jefferson, Tuesday, February 11, at which time a technicolor film on Pneumonia was presented by F. E. Schmidt, M.D., of Chicago.

John R. Black, M.D., Secretary

### Grundy County

The Grundy County Medical Society met at the New Columbia Hotel in Grundy Center Tuesday, January 21, with the wives of the members as guests. Officers elected at the business meeting are: Dr. Hugo V. Kahler of Reinbeck, president; Dr. Charles H. Bartruff of Reinbeck, vice president; Dr. George A. Biebesheimer of Reinbeck, secretary and treasurer; Dr. Michael H. Thielen of Grundy Center, delegate; and Dr. Henry W. Clasen of Dike, alternate delegate.

J. E. Rose, M.D., Secretary

### Hardin County

Herman J. Smith, M.D., of Des Moines, presented an illustrated lecture on Pneumonia, for members of the Hardin County Medical Society, Wednesday, January 29. The meeting was held at the Winchester Hotel in Eldora.

W. E. Marsh, M.D., Secretary

### Henry County

The Henry County Medical Society held a dinner meeting at the Harlan Hotel in Mt. Pleasant, Friday, January 24. A motion picture film on Contact Lens was shown and discussed by S. W. Huston, M.D., of Mt. Pleasant. J. Stewart Jackson, M.D., of Mt. Pleasant, presented a paper on Infant Feeding, which was discussed by B. D. Hartley, M.D., of Mt. Pleasant, and Henry Traut, D.D.S., also of Mt. Pleasant.

### Humboldt County

Officers elected to serve the Humboldt County Medical Society during 1941 are as follows: Dr. Cloyce A. Newman of Bode, president; Dr. James H. Coddington of Humboldt, secretary and treasurer; Dr. Asa A. Arent of Humboldt, delegate; and Dr. Newman, alternate delegate. The meeting was held in Humboldt Friday, January 24.

J. H. Coddington, M.D., Secretary

### Jackson County

Results of the annual election of officers for the Jackson County Medical Society, held Thursday, January 23, at the home of Dr. William Lowder in Maquoketa, are as follows: Dr. William Lowder of Maquoketa, president; Dr. E. L. Lampe of Bellevue, vice president; and Dr. Earl V. Andrew of Maquoketa, secretary and treasurer.

### Johnson County

The Johnson County Medical Society held its regular monthly meeting at the Hotel Jefferson in Iowa City, Wednesday, February 5. One hundred fourteen

members and six guests were present. The scientific program was presented by Thomas L. Waring, M.D., of the department of orthopedics, who spoke on The Diagnosis and Treatment of Low Back Pain.

A. L. Sahs, M.D., Secretary

#### Linn County

The next meeting of the Linn County Medical Society will be held in Cedar Rapids, Thursday, March 13, and physicians in surrounding counties are cordially invited to attend. The speaker will be Clifford J. Barborka, M.D., of Chicago, who will address the group on Nutrition and Subclinical States of Deficiency Diseases.

J. Stuart McQuiston, M.D.,  
Chairman, Program Committee

#### Madison County

The Madison County Medical Society met at the Winterset Community Hospital for a six-thirty dinner, Monday, February 17. Julian M. Bruner, M.D., of Des Moines, gave an illustrated lecture on Ligation and Injection Treatment of Varicose Veins.

Evelyn M. Olson, M.D., Secretary

#### Polk County

The open meeting of the Library Study Club to which members of the Polk County Medical Society and Des Moines Academy of Medicine were invited, was held Wednesday, February 5, at Younkers Tea Room. Lewis M. Overton, M.D., spoke on The Internal Fixation of Intertrochanteric Fractures of the Hip.

The regular meeting of the Society was held Wednesday, February 19, at the Mercy Hospital, with a courtesy dinner at six-thirty, after which the following program was presented: Avoidable Errors in Technic in Surgery of the Female Pelvis, Howard D. Gray, M.D.; The Use of Sulfanilamide, Sulfapyridine and Sulfathiazole in the Treatment of Genito-urinary Diseases, Clifford W. Losh, M.D.; The Surgical Treatment of Intractable Pain, Walter D. Abbott, M.D.; and Treatment of Tendon Injuries, Dwight C. Wirtz, M.D.

D. H. Kast, M.D., Secretary

#### Sac County

A meeting of the Sac County Medical Society was held Thursday, February 20, at the Park Hotel in Sac City. Guest speaker for the occasion was John D. Lutton, M.D., of Sioux City, who spoke on Local Anesthesia as an Aid in Obstetrics. An interesting case history presentation was given by H. N. Neu, M.D., of Sac City.

W. I. Evans, M.D., Secretary

#### Scott County

Members of the Scott County Medical Society met in regular session at the Lend-A-Hand Club in Davenport, Tuesday, February 4, and Frank R. Peterson, M.D., professor of surgery, State University of Iowa,

College of Medicine, Iowa City, addressed the group on Gallbladder Surgery.

J. H. Sunderbruch, M.D., Secretary

#### Shelby County

A joint meeting of the Shelby County Medical Society and the Shelby County Dental Society was held in Harlan at the Hotel Saylor, Monday, February 10. Carl I. Anderson, D.D.S., of Harlan, gave a demonstration of Dental X-Rays.

#### Sioux County

Ray M. Balyeat, M.D., of Oklahoma City, Oklahoma, was guest speaker for the Sioux County Medical Society at the meeting held Tuesday, February 18, at the Warren Hotel in Rock Valley. Dr. Balyeat presented an illustrated lecture on The Diagnosis and Treatment of the Common Allergic Manifestations as Encountered by the General Practitioner, after conducting a dry clinic over five patients with allergic diseases.

H. J. Kooiker, M.D., Secretary

#### Wapello County

Earl D. McClean, M.D., of Des Moines was the speaker of the evening at a special meeting of the Wapello County Medical Society in Ottumwa, Monday, February 17. Dr. McClean spoke on The Rôle of the Physician in the National Defense Program. Invited guests to the meeting included members of the Lions, Kiwanis and Rotary Clubs, and dentists, nurses, pharmacists and veterinarians of the county.

#### Woodbury County

The regular monthly meeting of the Woodbury County Medical Society was held Thursday, February 20, at the Mayfair Hotel in Sioux City, with Sumner L. Koch, M.D., of Chicago, speaking on Treatment of Injuries of the Hand.

#### PERSONAL MENTION

Dr. Arthur Steindler, professor of orthopedic surgery, State University of Iowa, College of Medicine, Iowa City, spoke for the third consecutive year at the annual Jasper County President's Ball, held in the Hotel Maytag at Newton, Thursday, January 30.

Dr. Mark M. Piper, formerly of Rochester, Indiana, has entered the practice of medicine in Hopkinton. Dr. Piper was graduated in 1927 from the State University of Iowa, College of Medicine, Iowa City, and interned at the Methodist Hospital in Indianapolis.

Dr. Henry F. Dolan of Anamosa presented an illustrated lecture on "The Latest Innovations in



Surgery", in which he discussed the process of nailing a hip, for members of the Anamosa Rotary Club, Thursday, January 2.

Dr. Norman D. Render, formerly of the staff of the Cherokee State Hospital, has assumed his new duties as superintendent of the Clarinda State Hospital. He was appointed to succeed the late Dr. R. D. Smith, under whom he served as a staff member for several months in 1936 and 1937.

Dr. John H. Peck, superintendent of the State Sanatorium in Oakdale, was guest speaker for the Sixth District of the Iowa State Association of Registered Nurses, Thursday, February 13 in Muscatine. Dr. Peck spoke on "The Nurse's Responsibility in the Control of Tuberculosis".

Dr. Edward M. Mark, formerly of Manilla, has located in Denison. He had practiced in Manilla for ten years.

Dr. Edward A. McMurray has returned to Newton after an eighteen months' absence, during which time he was engaged in postgraduate studies on eye, ear, nose and throat diseases. He will be associated in the practice of this specialty with Dr. Leon P. Adams.

Dr. Arline M. Beal of Davenport gave an account of her experiences while she was physician in charge of the Kugler United Lutheran Hospital in Guntur, India, from 1925 to 1937, for members of the Davenport Gyro Club, Tuesday, January 21.

Dr. Edgar Christy, who has practiced in Hastings for the past thirty-two years, has moved to Glenwood, where he has accepted a position on the staff of the Glenwood State School.

Friends and former students of Dr. Charles J. Rowan will be grieved to learn of Mrs. Rowan's death which occurred on February 13, at her home in Beverly Hills, California.

### MARRIAGES

Miss Frances Ann Peck of Cedar Rapids and Dr. James J. Redmond of Cedar Rapids, son of Dr. and Mrs. Thomas M. Redmond of Monticello, were married Wednesday, February 5, at the Immaculate Conception Church in Cedar Rapids. After a wedding trip to Chicago, the young couple returned to Cedar Rapids for a short time before leaving for Camp Claiborne, Louisiana, where Dr. Redmond has been called for military service.

### DEATH NOTICES

Desmond, Thomas Francis, of Webster City, aged seventy-five, died February 1, after a paralytic stroke several months ago. He was graduated in 1895 from Rush Medical College, University of Chicago, and had long been a member of the Hamilton County Medical Society.

Houghton, Frederick Walker, of Council Bluffs, aged seventy-nine, died February 12 of heart disease. He was graduated in 1883 from Columbia University College of Physicians and Surgeons, New York, and at the time of his death was a member of the Pottawattamie County Medical Society.

Leahy, Paul Eugene, of Sioux City, aged thirty-six, died January 22 in Valentine, Nebraska, of injuries received in an automobile accident. He was graduated in 1933 from Loyola University School of Medicine, Chicago, and at the time of his death was a member of the Woodbury County Medical Society.

McColm, Charles W., of New Market, aged seventy-five, died February 4 after several weeks' illness. He was graduated in 1892 from the College of Physicians and Surgeons, Keokuk, and had long been a member of the Taylor County Medical Society.

McMillan, Edwin C., of Hudson, aged sixty-three, died February 5 of heart disease. He was graduated in 1903 from the Hahnemann Medical College and Hospital, Chicago, and at the time of his death was a member of the Black Hawk County Medical Society.

Rohlf, William Amos, of Waverly, aged seventy-four, died February 17 after an extended illness. He was graduated in 1891 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a Life Member of the Bremer County and Iowa State Medical Societies. A complete obituary will be found in the History of Medicine section in this issue of the JOURNAL.

Wiltse, Edward W., of Modale, aged seventy-nine, died January 25 after a paralytic stroke. He was graduated in 1893 from the University of Nebraska, College of Medicine, Omaha, and at the time of his death was a member of the Harrison County Medical Society.

Woodbridge, Ward, of Central City, aged ninety-two, died February 4 after a long illness. He was graduated in 1881 from Rush Medical College, University of Chicago, and at the time of his death was a Life Member of the Linn County and Iowa State Medical Societies.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. McCLINTOCK, Iowa City

DR. R. T. LENAGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. HENRY G. LANGWORTHY, Dubuque

## Pioneer Doctors of Clinton County

W. M. WALLIKER, M.D., Clinton, Iowa

The first regularly educated physician in Clinton county was Dr. William Bassett who settled in Camanche in 1841. Dr. Bassett, a native of Massachusetts, was born in 1808 and was educated at the Berkshire Medical College, Pittsfield, Massachusetts. He remained in Camanche until 1844 when he removed to Lyons (now a part of the city of Clinton). Here he practiced his profession until 1848 when he removed to Illinois.

Dr. Zebulon Metcalf came next locating in De Witt in 1842, residing there until his death in 1847.

In 1850 two physicians began the practice of their profession in Camache, Dr. J. P. Anthony and Dr. E. T. Manning. Dr. Anthony was a graduate of the Berkshire Medical College, Pittsfield, Massachusetts. Dr. Manning came to Camanche in the capacity of a Baptist minister with which he combined the practice of medicine. He held an honorary degree from the Bennett Eclectic Medical College of Chicago. When asked why he left preaching for medicine, he said men suffered more from colic than from fear of Hell, and would pay better.

Dr. A. L. Ankeny, a graduate of Rush Medical College, Chicago, came to Lyons in 1850. He was too good a business man to stay in the practice of medicine, and he retired from practice in 1855 to enter the business field. A large business block on one of Clinton's main streets bears his name.

Dr. A. B. Ireland, a native of Tennessee, came to Camanche in 1852 and practiced his profession there until his death in 1878. He was a graduate of the Illinois Medical College at Jacksonville. Dr. Ireland was a man of great ability and enjoyed an extensive practice. He was elected to the State Senate in 1869. He was the father-in-law of Dr. George A. Smith who practiced in Clinton for almost, if not more than, a half a century and who served in the Iowa Legislature. Dr. Smith passed away a few months ago at the advanced age of eighty-six years.

Among the other early practitioners in Clinton County were Drs. William McQuigg and C. H.

Lothrop of Lyons, Drs. Asa Morgan and Daniel Langan of De Witt and Drs. Henry McCormick, P. J. Farnsworth and A. Reynolds of Clinton.

The Clinton County Medical Society was organized in 1857 and, being one of the first six in the state, can claim to be one of the pioneer societies of the state. The first officers were:

Dr. A. B. Ireland, Camanche, president.

Dr. A. P. Hudson, Lyons, vice president.

Dr. Asa Morgan, De Witt, secretary.

Of the sixteen practicing members of the society at the onset of the Civil War, twelve answered their country's call and served with honor and distinction.

The first meeting of the society following the war was held at De Witt in January, 1869. The society was reorganized and incorporated, the articles being signed by Drs. A. B. Ireland, C. H. Lothrop, P. J. Farnsworth, A. J. Hobart, H. S. Farnsworth, G. F. Wetherell, A. Reynolds, Henry McCormick and O. E. Deeds.

Dr. Lothrop compiled one of the first medical directories in the state. From the minutes of the early society one can judge that he was a man of more or less mechanical ability, since he devised a number of appliances for the treatment of fractures and other conditions. He also wrote a history of the early medical profession of Clinton County from the beginning to 1877. From this book it appears that the early physicians were more particular in regard to the code of ethics than are many of the present day physicians. Two of the members of the society were expelled from membership because they agreed to act as "poor doctor" for a lower fee than the usual rate. In 1870 Dr. Lothrop became affected with some type of spinal disease which disabled him from walking and he practiced for a number of years in a wheel chair.

Dr. Daniel Langan of De Witt was the first delegate to represent the society at a meeting of the American Medical Association. This was in 1872.

Most of the older doctors who received their



medical education at Iowa University will remember Dr. P. J. Farnsworth, or as he was familiarly called "Pappy" Farnsworth. In 1868 he was elected to fill the chair of materia medica and diseases of children in that institution, which position he held for many years. This old time doctor with his long Prince Albert coat and stooped shoulders has long since passed to his reward but all who knew him will ever revere the memory of this kindly man who went about doing good.

Dr. Albert Reynolds, a native of Vermont and a graduate of the university of that state, located in Clinton in 1869 and remained here until 1873 when he was appointed to be the first superintendent of the State Hospital at Independence. Here he remained for a number of years after which he resigned his position to return to Clinton where he practiced until his death. It is doubtful if any physician who ever practiced in the city of Clinton was held in higher esteem both by the laity and the profession than was Dr. Reynolds. His son, Dr. Harry R. Reynolds, who married a daughter of another pioneer Iowa physician, Dr. D. S. Fairchild, Sr., practiced his profession in Clinton for a number of years previous to the outbreak of the World War when he entered the service. At the close of the war he entered the United States Public Health Service and is now stationed at a government hospital in North Chicago.

We honor the memory of those pioneer physicians who under the most adverse conditions were able to carry on. By the light of the tallow candle or the kerosene lamp they welcomed the newborn babe and comforted those whose life journey was nearing its end. When we realize that in their day there were no hospitals, laboratories, trained nurses, antitoxins, serums, x-ray or many of the other aids to diagnosis and treatment that we enjoy, we marvel at their attainments and wonder whether, without these aids, we could have done as well. Confidant, friend and advisor, they have played their parts on life's stage and passed on, leaving a priceless heritage for us who follow after.

#### OBITUARY

##### WILLIAM AMOS ROHLF, M.D., 1867-1941

After a long illness, death has at last claimed a great physician. On the morning of February 17, 1941, Dr. Rohlf passed quietly to the great beyond and Iowa lost one of her outstanding leaders in medicine.

Dr. William Amos Rohlf was born in Davenport, Iowa, January 5, 1867. Graduating from the Davenport High School at the age of seventeen, he taught school for three years at Wolcott, Iowa. A medical student at the State University of Iowa, he graduated

in March, 1891, with the degree of M.D. Shortly thereafter he located in Hampton, Iowa, where he practiced until 1897 when he came to Waverly, Iowa, the theatre of his manifold activities and where he enjoyed a very extensive practice in medicine until his last illness.

Dr. Rohlf combined in one man an eminent general practitioner and a famous surgeon. He was past president of the Iowa State Medical Society, the Iowa Clinical Surgical Society, the Austin Flint-Cedar Valley Medical Society, the Bremer County Medical Society and president of the staff of Mercy Hospital, which he helped to found, at Waverly, Iowa. He was a prominent member of the American Medical Association and a Fellow of the American College of Surgeons. He was a member of the Methodist Church in Waverly, Iowa. He was an Odd Fellow, a Mason, a Knight Templar and a Rotarian. He is survived by his widow, the former Lottie Beed, of Hampton, Iowa.

Dr. Rohlf was fortunately endowed with a charming personality together with a commanding capacity. He was a dynamo of energy. Despite his manifold activities as a successful and busy practitioner through the years, Dr. Rohlf found time for study and investigation in and out of the field of medicine, and his extensive reading made him a learned man. He found time to devote to various civic duties which made him an outstanding figure in his community. Dr. Rohlf was a lover of his kind, and took keen satisfaction in doing deeds of kindness, stealthily. There were few of the innumerable company of us fortunate enough to contact this man who will not carry to our graves somehow and in some way a conscious debt of obligation to him. Generous to a fault, other people's troubles were always his troubles too. The glory of this man is his superlative record of service to the suffering and the needy everywhere. He had a kindly optimistic outlook on life and was especially considerate and helpful to his inexperienced young colleagues. On numerous occasions at medical meetings when some young member would read a doubtfully technical paper which received only the uncertain acclaim of silence, Dr. Rohlf would rise to the occasion and help the situation by some tactful word of praise. He was a gifted and facile writer; his originality stood out sharply in all his many publications. Dr. Rohlf was not only an able writer, but an excellent speaker if not indeed an orator. He was a gentleman of courage, forceful manner and delightful humor. His judgment of men and affairs was remarkably accurate and he possessed an eminent common sense.

Dr. Rohlf was a talented man who would have been successful in almost any walk of life. As a surgeon, he was a man of bold initiative as well as remarkable resourcefulness. A leader in his profession, his annual Birthday Clinics became a recognized feature in Upper Mississippi Valley medicine. So passes a great figure in northern Iowa, a loyal friend, a boon companion, a clinician, a raconteur—a very human man.

J. F. Auner, M.D.

# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

- ARTHRITIS AND ALLIED CONDITIONS—By Bernard I. Comroe, M.D., instructor in medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1940. Price, \$8.50.
- GETTING READY TO BE A MOTHER—By Carolyn Conant van Blarcom. Fourth edition. The Macmillan Company, New York, 1940. Price, \$2.50.
- OBSTETRICS AND GYNECOLOGY—Edited by Fred L. Adair, professor of obstetrics and gynecology, University of Chicago. Two volume illustrated set. Lea and Febiger, Philadelphia, 1940. Price, \$20.00.
- THE INJURED BACK AND ITS TREATMENT—Edited by John D. Ellis, M.D., Chicago. Charles C. Thomas, Springfield, 1940. Price, \$5.50.
- PHYSICAL DIAGNOSIS—By Ralph H. Major, M.D., professor of medicine, University of Kansas. Second edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price, \$5.00.
- PHYSICAL DIAGNOSIS—By William Nance Anderson, M.D., associate clinical professor of medicine, University of Southern California, School of Medicine, Los Angeles. Lea and Febiger, Philadelphia, 1940. Price, \$4.75.
- MEDICAL NURSING—By Edgar Hull, M.D., clinical professor of medicine, Louisiana State University School of Medicine, New Orleans. F. A. Davis Company, Philadelphia, 1940. Price, \$3.50.
- APPLIED PHARMACOLOGY—By Hugh Alistair McGuigan, M.D., professor of pharmacology and therapeutics, University of Illinois, College of Medicine. Illustrated. The C. V. Mosby Company, St. Louis, 1940. Price, \$9.00.
- OBSTETRICS IN GENERAL PRACTICE—By J. P. Greenhill, M.D., professor of obstetrics and gynecology, Loyola University Medical School. The Year Book Publishers, Chicago, 1940. Price, \$3.50.
- OFFICE UROLOGY—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1940. Price, \$10.00.
- VITAMIN THERAPY IN GENERAL PRACTICE—By Edgar S. Gordon, M.D., associate in medicine, and Elmer L. Severinghaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1940. Price, \$2.75.
- THE DOCTOR AND THE DIFFICULT CHILD—By William Moodie, M.D., Medical Director, London Child Guidance Clinic. The Commonwealth Fund, New York, 1940. Price, \$1.50.
- THE 1940 YEAR BOOK OF GENERAL MEDICINE—By George F. Dick, M.D., J. B. Amberson, Jr., M.D., George R. Minot, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1940. Price, \$3.00.
- FOREIGN BODIES LEFT IN THE ABDOMEN—By Harry Sturgeon Crossen, M.D., professor emeritus of clinical obstetrics and gynecology, Washington University School of Medicine, St. Louis. The C. V. Mosby Company, St. Louis, 1940. Price, \$10.00.

## BOOK REVIEWS

### THE PHYSICIAN'S DAILY RECORD

Published by the Kersten Publishing Company, Fort Dodge, Iowa. Price, \$5.00.

This book is a welcome solution to the bookkeeping problems of a medical practitioner. It must have been compiled by a doctor who knows a doctor's clerical problems. No other record is necessary except the case histories of the patients.

All monthly expenses are blocked out with a financial summary for the month and for the year to date. Another page is given to non-professional receipts and expenditures. There are pages for narcotics dispensed and surgical records, the obstetric waiting lists, notifiable diseases, and this year's book has an added inoculation sheet. In short it simplifies bookkeeping to the point where even a doctor knows how much income tax he has to pay.

E. T. B.

### PRACTICAL BEDSIDE DIAGNOSIS AND TREATMENT

By Henry Joachim, M.D., chief of medicine, Israel-Zion and Beth Moses Hospitals, New York. Charles C. Thomas, Springfield, Illinois, 1940. Price, \$7.50.

The text is a new and practical approach to the most important problem confronting the clinician, bedside diagnosis. The author exhaustively discusses the problems of diagnosis and therapy, as he carries the reader through a logical trend of reason and experience. The reader will fortunately inherit the practical knowledge of the author who has practiced

clinical medicine intensively for the past thirty-five years.

The volume is systematically divided into twelve sections, covering the infectious diseases, the heart, the lungs, the blood, alimentary tract, liver, nervous system, etc. The text is replete with sections for systems with their associated objective pathologic phenomena.

The discussion by systems and the thorough and clear routine methods of presenting symptoms, differential diagnosis, physical signs and treatment make this text a most instructive and valuable one.

J. W. C.

### METHODS FOR DIAGNOSTIC BACTERIOLOGY

By Isabelle G. Schaub, A.B., assistant in bacteriology, department of pathology and bacteriology, Johns Hopkins University School of Medicine; and M. Kathleen Foley, A.B. The C. V. Mosby Company, St. Louis, 1940. Price \$3.00

On its title page this book is presented as a complete guide for the isolation and identification of pathogenic bacteria for medical bacteriology laboratories. It is intended for use as a manual of bacteriologic methods, incorporating the "tricks of the trade" of the bacteriologist. Theoretical discussions and explanations are avoided.

Its scope includes instructions for the cultivation of bacteria from clinical and autopsy material, day-by-day directions for the identification of organisms, methods for the serologic study of organisms and patients' sera, and formulas for culture media, stains and other preparations as employed at the Johns



Hopkins Hospital and School of Medicine. The authors' objectives are attained by the presentation of difficult subject matter in concise, outline form, and by the use of many tables.

The book fills a definite need for a practical guide in clinical bacteriology. It is recommended particularly for use in hospitals, laboratories and clinics where the services of a full-time bacteriologist are not available.

R. F. B.

### CONGENITAL SYPHILIS

By Charles C. Dennie, M.D., professor of dermatology, University of Kansas Medical School, and Sidney F. Pakula, M.D., Kansas City. Lea and Febiger, Philadelphia, 1940. Price, \$8.00.

Many volumes have been written about syphilis, and all of them have contained some reference to congenital syphilis. Here, at last, is probably the most complete treatise on this subject. The language is so clear and concise, and the style so engaging, it is difficult to remember this is a truly scientific work. The authors have drawn from their own large experience and a generous bibliography for both theory and fact.

The chapter on serologic reactions and their significance is of special value in the understanding of all types of syphilis. The following chapter on syphilis in pregnancy forms the background for the more detailed descriptions of the various complications of congenital syphilis discussed in succeeding chapters. The climax of the book is the extensive chapter on treatment which is undoubtedly the most complete and up-to-date to be found anywhere.

Prevention as well as treatment of congenital syphilis is to be accomplished primarily by the general practitioner. He is the man who first sees the patient and has the first chance to make a diagnosis and start appropriate treatment. Conversely, if he misses the diagnosis much valuable time is lost and irreparable damage is done.

In order that he may adequately fulfill this part of his obligation to his patients, he must arm himself with as much information about congenital syphilis as possible. To date there is no better source of information on all phases of congenital syphilis than between the covers of this book. It is recommended to the practitioner and to the specialist, not as a reference book alone, but as a book to be read, studied and enjoyed.

R. M. S.

### ARTIFICIAL PNEUMOTHORAX

Edited by Edward N. Packard, M.D., John N. Hayes, M.D., and Sidney F. Blanchet, M.D. Illustrated. Lea and Febiger, Philadelphia, 1940. Price, \$4.00.

This series of contributions by Saranac Lake physicians to the studies of the Trudeau Foundation on the subject of pneumothorax is not only a compila-

tion of known facts about the procedure as a therapeutic weapon against pulmonary tuberculosis, but is also a report of experiences gained by the various contributors.

The different phases of the pneumothorax treatment are well handled by the contributing authors. The chapter on selection of cases is helpful, and that on pleural complications is thought-provoking. The chapter on duration and termination of treatment presents a very conservative series of observations and some well-grounded advice. The relation of pneumothorax to other types of radical treatment, such as oleothorax or other forms of thoracic surgery, is adequately presented. The only criticism which one might make of the book is the omission of a chapter, or at least a subheading, on gas analysis of the confined air in the pneumothorax cavity. This is an interesting study which might make the subject of the physiology of pneumothorax treatment somewhat more understandable from the scientific viewpoint.

In spite of this lack, however, the book is pre-eminently practical and furnishes much sound counsel and advice for the occasional user of pneumothorax, as well as for the doctor who is treating many patients.

J. C. P.

### PNEUMOCONIOSIS (SILICOSIS): THE STORY OF DUSTY LUNGS

By Lewis Gregory Cole, M.D., director of silicotic research, John B. Pierce Foundation, New York; and William Gregory Cole, M.D., New York. The John B. Pierce Foundation, 40 West 40th Street, New York, 1940. Price, \$1.00.

In this preliminary report from the John B. Pierce Foundation in New York the authors have told in a very readable and entertaining style the story of what happens to lungs which encounter dusts of various sorts and chemical contents.

The problems are clearly stated; etiology, pathogenesis, anatomy and pathology must be taken into consideration. However, more practically, the clinical application of the knowledge gained from these questions must again be instituted for the patient's sake along the lines of roentgenology, the various clinical problems, and the social and economic problems of such a disease. The question of legislation and adjudication is also stated. The report has been improved by the addition of a reprint from *Radiology* on "The Roentgenologic Diagnosis of Pneumoconiosis (Silicosis) and Use of the Electric Eye to Determine Regional Densities." Also appended is a reprint from the *Journal of the American Medical Association* on "Dyspnea of Silicosis: What Causes It?"

The entire book is extremely interesting. The scientific standpoint is well presented and the literary style is exceptionally pleasing. The book would be equally gratifying to the specialist, or the general practitioner who might be interested in the subject.

J. C. P.

### THE NEWER NUTRITION IN PEDIATRIC PRACTICE

By I. Newton Kugelmass, M.D., Broad Street Hospital, New York. Illustrated. J. B. Lippincott Company, Philadelphia, 1940. Price, \$10.00.

This volume is designed to apply the newer knowledge of nutrition to everyday practice of pediatrics, to correlate research in nutrition with clinical application.

The contents are divided into three units. Unit one is devoted to nutritional physiology, with a consideration of energy requirements, and a detailed presentation of the food constituents and their rôle in human metabolism. Unit two discusses nutrition in health, and considers infant nutrition, infant formulas and nutrition in childhood. The third unit covers the problem of nutrition in disease, and is divided into sections on digestive diseases, deficiency diseases, metabolic diseases, allergic diseases, infections and regional diseases.

This book is a reliable reference volume, replete with tables and diets. An excellent bibliography is attached. There is an enormous amount of information between the covers of this volume which will guide the physician in problems of nutrition.

D. K.

### THE NEW INTERNATIONAL CLINICS

Volume IV, New Series Three. Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1940.

This volume of the New International Clinics consists of eleven original contributions on a wide variety of subjects, twenty-three clinics by members of the faculty of the University of Louisville, and a review of the present status of the management of spreading peritonitis of appendiceal origin by Calvin M. Smyth, Jr., of Philadelphia.

The outstanding contribution to this volume is that of J. Arthur Myers on the subject of the Diagnosis and Treatment of Pulmonary Tuberculosis. The author presents the modern concept of the pathogenesis of the disease. The diagnosis, treatment and significance of the first infection type of tuberculosis are clearly outlined. The reinfection types of the disease, as manifested by the acute and chronic forms, are then considered in some detail. The author points out that the diagnosis and treatment of pulmonary tuberculosis are changing from the clinical to the preclinical stage of the disease, and that the disease must be discovered before symptoms are present, before physical findings are manifest, and before sputum can be obtained. In reinfection tuberculosis, use of the tuberculin test and x-ray will detect the preclinical lesion, and serial x-rays will determine

the significance of the lesion. The treatment depends upon the changes as shown in serial x-rays. The careful study of this article will give the reader a clear picture of the modern concept of tuberculosis, and will guide the physician in the search for and the management of the tuberculous patient.

Smyth in a review of the management of spreading peritonitis concludes that, in general, immediate operation offers the patient a better chance of recovery than delay. Drainage is favored over closure without drainage, the maintenance of fluid, electrolyte and protein levels is fundamental, and sulfanilamide therapy has justified its use in peritonitis.

The New International Clinics appear in four volumes a year, and they cannot be too highly commended or recommended. The diligent student of these volumes will be fully conversant with progress in medicine.

D. K.

### CANCER IN CHILDHOOD

By Harold W. Dargeon, M.D., Memorial Hospital for Cancer and Allied Diseases, New York. Illustrated. The C. V. Mosby Company, St. Louis, 1940. Price, \$3.00.

This volume of about one hundred pages comprises a symposium on malignant tumors in childhood by staff members of the Memorial Hospital for Cancer and Allied Diseases in New York. The contributions of the various staff members were published in the *Journal of Pediatrics*, and these are presented in this splendidly edited volume. James Ewing contributes an introductory survey of cancer in childhood.

Although malignant tumors in childhood are relatively rare, there were 175 deaths in New York from this cause during 1934, 1935 and 1936. During this three year period cancer was as important a cause of death as were some of the common diseases of childhood. In the year 1935 the mortality statistics indicate that in the United States Registration Area, 903 children under fifteen years of age died from cancer, 770 died from typhoid fever, 706 from acute poliomyelitis, 559 from tetanus, 763 from acute rheumatic fever and 467 from diabetes mellitus.

The subject matter is covered by sections on malignant tumors of bone, the lymphoid tumors, cancer of the genito-urinary organs, gynecologic cancer, cancer of the head and neck, tumors of soft somatic tissues, and blood and lymph vessel tumors. From 1930 to 1938, 218 cases of childhood malignancy were observed; 23 were carcinomas, 33 were of the lymphoid group, and 162 were sarcomas.

This is an excellent reference volume which gives detailed information about Wilm's tumor, retinal glioma, Ewing's tumor, and other malignant tumors of childhood. The neoplasms involving the central nervous system are not considered.

D. K.







Frank P. McNamara, M.D.

President

Iowa State Medical Society

1940-1941

517



# The JOURNAL

of the

## Iowa State Medical Society

VOL. XXXI

DES MOINES, IOWA, APRIL, 1941

No. 4

### IOWA STATE MEDICAL SOCIETY

Organized in 1850

## Ninetieth Annual Session

Davenport, Iowa - May 14, 15 and 16, 1941

Do not fail to register. Registration Bureau—Hotel Blackhawk

### PROGRAM

#### GENERAL SESSION

Wednesday Morning, May 14

9:00 a. m.

Main Ball Room

Opening Exercises:

9:00-9:30

Invocation—

MOST REVEREND HENRY P. ROHL-  
MAN, Bishop of Davenport

Greetings—

HOWARD A. WEIS, M.D., President,  
Scott County Medical Society

Response—

HAROLD L. BRERETON, M.D., Em-  
metsburg, Second Vice President,  
Iowa State Medical Society

Address:

9:30-10:15

Surgical Treatment of Carcinoma  
of the Lower Portion of the Colon  
CHARLES W. MAYO, M.D., Roch-  
ester, Minnesota

Recess to Visit Exhibits

10:15-10:30

Address:

10:30-11:15

Certain Considerations of Coronary  
Disease

FREDERICK A. WILLIUS, M.D.,  
Rochester, Minnesota

Address:

11:15-11:45

Military Medicine in Its General Ap-  
plication

BRIGADIER-GENERAL SHELLEY U.  
MARIETTA, M.D., Washington, D.  
C., Assistant Surgeon General,  
United States Army

President's Address:

11:45-12:00

FRANK P. MONAMARA, M.D., Du-  
buque

#### GENERAL SESSION

Thursday Morning, May 15

9:00 a. m.

Main Ball Room

Symposium on Cancer

Cancer from a Gynecologic Stand-  
point

9:00-9:20

JOHN H. RANDALL, M.D., Iowa City

Cancer of the Prostate Gland

9:20-9:40

PAUL F. OLSON, M.D., Dubuque

Cancer as Seen in the Head and  
Neck

9:40-10:00

DEAN M. LIERLE, M.D., Iowa City

Recess to Visit Exhibits

10:00-10:15

Carcinoma of the Breast

10:15-10:35

JOHN W. DULIN, M.D., Iowa City

General Summary

10:35-11:00

CHARLES W. MAYO, M.D., Rochester,  
Minnesota

Address:

11:00-11:45

American Health and National De-  
fense

NATHAN B. VAN ETEN, M.D., New  
York, New York, President, Ameri-  
can Medical Association

# Sectional Conferences

## Wednesday Afternoon, May 14

MEDICAL SECTION	SURGICAL SECTION	EYE, EAR, NOSE AND THROAT SECTION
<p>Clifford R. Watkin, M.D., Chairman Main Ball Room</p> <p>Recognition of the Normal Heart— 2:00-2:30 FREDERICK A. WILLIUS, M.D., Rochester</p> <p>Etiology and Treatment of Iron Deficiency Anemias— 2:30-3:00 WILLIS M. FOWLER, M.D., Iowa City</p> <p>Discussers— ALDIS A. JOHNSON, M.D., Council Bluffs FRED STERNAGEL, M.D., West Des Moines</p> <p>Clinical Problems of Infectious Mononucleosis— 3:00-3:30 JULIAN E. McFARLAND, M.D., Ames</p> <p>Discussers— EUGENE F. VAN EPPS, M.D., Clinton JOHN R. PARISH, M.D., Grinnell</p> <p>Diagnosis of Gallbladder Disease— 3:30-4:00 EDWARD H. SIBLEY, M.D., Sioux City</p> <p>Discussers— DONALD W. LEIK, M.D., Dubuque CHARLES C. COLLESTER, M.D., Spencer</p> <p>Diagnosis and Treatment of Infections of the Upper Urinary Tract— 4:00-4:30 MERRILL M. BENFER, M.D., Davenport</p> <p>Discussers— GERALD V. CAUGHLAN, M.D., Council Bluffs CARL W. SMITH, M.D., Dubuque</p>	<p>Frank R. Peterson, M.D., Chairman Pine Room</p> <p>Intussusception— 2:00-2:30 GERRIT MARIS, M.D., Hull</p> <p>Discussers— MERLE J. BROWN, M.D., Davenport CHANNING E. DAKIN, M.D., Mason City</p> <p>Acute Pancreatic Necrosis—The Unsolved Acute Abdominal Catastrophe—2:30-3:00 WENDELL L. DOWNING, M.D., Le Mars</p> <p>Discussers— HENRY F. DOLAN, M.D., Anamosa HARRY A. AMESBURY, Clinton</p> <p>The Prophylactic and Therapeutic Use of Oxygen in the Surgical Patient— 3:00-3:30 STUART C. CULLEN, M.D., Iowa City</p> <p>Discussers— LAWRENCE A. BLOCK, M.D., Davenport GEORGE H. STEELE, M.D., Belmond</p> <p>Surgical Abdominal Conditions in Infants— 3:30-4:00 WILLIAM RANKIN, M.D., Keokuk</p> <p>Discussers— LEE E. SHAFER, M.D., Davenport GEORGE M. CRABB, M.D., Mason City</p> <p>Non-Malignant Lesions of the Large Bowel— 4:00-4:30 CLYDE B. MEFFERT, M.D., Cedar Rapids</p> <p>Discussers— ELWOOD P. RUSSELL, M.D., Burlington LEO C. NELSON, M.D., Jefferson</p>	<p>Elmer P. Weih, M.D., Chairman Blue Room</p> <p>Headaches of Ocular Origin— 2:00-2:30 RAYMOND J. STEPHEN, M.D., Cedar Rapids</p> <p>Discussers— ABBOTT M. DEAN, M.D., Council Bluffs FRED F. AGNEW, M.D., Independence</p> <p>Newer Drugs in Ophthalmology and Otolaryngology— 2:30-3:00 JOHN H. TAIT, M.D., Des Moines</p> <p>Discussers— WILLIAM P. HOFMANN, M.D., Davenport JOHN E. ROCK, M.D., Davenport</p> <p>Actinic Therapy in Middle Ear Infections— 3:00-3:30 FREDERICK J. CHAPMAN, M.D., Keokuk</p> <p>Discussers— HORACE E. HOSFORD, M.D., Burlington CARL E. SAMPSON, M.D., Creston</p> <p>Industrial Ophthalmology— 3:30-4:00 GILBERT C. STRUBLE, M.D., Ottumwa</p> <p>Discussers— WARREN H. FOSTER, M.D., Clinton ALBERT J. JOYNT, M.D., Waterloo</p> <p>Causes of Blindness in Iowa as Related to Blind Assistance Program— 4:00-4:30 HAROLD J. MCCOY, M.D., Des Moines</p> <p>Discussers— GEORGE C. ALBRIGHT, M.D., Iowa City HENRY G. LANGWORTHY, M.D., Dubuque</p>



# Our Guests



Upper Left  
FREDERICK A. WILLIUS, M.D.  
Rochester

Center  
NATHAN B. VAN ETTEN, M.D.  
New York

Upper Right  
CHARLES W. MAYO, M.D.  
Rochester

Left  
WILLIAM H. SEBRELL, M.D.  
Washington, D. C.

Right  
RAYMOND B. ALLEN, M.D.  
Chicago

Lower Left  
JOSEPH L. BAER, M.D.  
Chicago

Lower Right  
SHELLEY U. MARIETTA, M.D.  
Washington, D. C.



## Sectional Conferences

### Friday Afternoon, May 16

MEDICAL SECTION Clifford R. Watkin, M.D., Chairman Main Ball Room	OBSTETRIC SYMPOSIUM Roy I. Theisen, M.D., Chairman Pine Room	EYE, EAR, NOSE AND THROAT SECTION Elmer P. Weih, M.D., Chairman Blue Room
Hydrochloric Acid Neutralization and Other Factors in Treatment of Gastric and Duodenal Ulcers— RALPH C. BROWN, M.D., Chicago 2:00-2:30	The Significance of Diagnosis in Obstetrics— JOSEPH L. BAER, M.D., Chicago, Illinois 2:00-2:30	Rhinoplasty from the Cosmetic Point of View— SAMUEL SALINGER, M.D., Chicago 2:00-2:30
Significant X-ray Findings in Heart Disease— HAROLD C. BONE, M.D., Des Moines 2:30-3:00 Discussers— ROBERT N. LARIMER, M.D., Sioux City GORDEN N. BEST, M.D., Council Bluffs	Relation of the Thyroid Gland to Menstrual Bleeding— ROBERT M. COLLINS, M.D., Council Bluffs 2:30-3:00	Drug and Food Sensitivity Complicating Corneal Ulcerations— HERMAN C. KLUEVER, M.D., Fort Dodge 2:30-3:00 Discussers— CARL A. NOE, M.D., Cedar Rapids FRANK H. REULING, M.D., Waterloo
Modern Aspects of Diagnosis and Management of Hypertension— EDWARD W. ANDERSON, M.D., Des Moines 3:00-3:30 Discussers— HERBERT W. RATHE, M.D., Waverly EVON WALKER, M.D., Ottumwa	Practical Application of Obstetric Analgesia— CECIL W. SEIBERT, M.D., Waterloo 3:00-3:30	Surgical Treatment of Chronic Dacryocystitis— JAMES E. REEDER, JR., M.D., Sioux City 3:00-3:30 Discussers— BENJAMIN F. KILGORE, M.D., Des Moines SUMNER B. CHASE, M.D., Fort Dodge
The Use and Abuse of Sedatives— CHARLES F. OBERMANN, M.D., Cherokee 3:30-4:00 Discussers— ALBERT A. SCHULTZ, M.D., Fort Dodge LESLIE E. WEBER, M.D., Wapello	Motion Picture 3:30-4:00	Intratracheal Anesthesia in Head Operations— JOHN A. THORSON, M.D., Dubuque 3:30-4:00 Discussers— ARTHUR C. RICHMOND, M.D., Fort Madison RALPH C. CARPENTER, M.D., Marshalltown
Treatment of Pneumonia— BENJAMIN F. WOLVERTON, M.D., Cedar Rapids 4:00-4:30 Discussers— CLARENCE P. PHILLIPS, M.D., Muscatine PHILLIPS E. LOHR, M.D., Churdan	Informal Discussion 4:00-4:30	A Severe Gastro-intestinal Complication Following the Use of Sulfapyridine— SYDNER D. MAIDEN, M.D., Council Bluffs 4:00-4:30 Discussers— WILLIAM W. PEARSON, M.D., Des Moines



# Iowa Interprofessional Association

## GENERAL SESSION

Thursday Afternoon, May 15  
Main Ball Room

Opening Remarks 2:00-2:15  
GEORGE W. MCCHANE, Waterloo, President  
Iowa Interprofessional Association

Address: 2:15-2:40  
The Need for Greater Interprofessional Cooperation in a Democracy—  
RAYMOND B. ALLEN, M.D., Chicago, Illinois,  
Executive Dean, University of Illinois Professional Colleges

Address: 2:40-3:10  
Vitamin B—  
WILLIAM H. SEBRELL, M.D., Washington, D. C., Chief, Division of Chemotherapy, National Institute of Health

Discusser— 3:10-3:25  
PHILIP C. JEANS, M.D., Iowa City

Address: 3:25-3:55  
Clinical Aspect of the Newer Sulfonamide Drugs  
JOHN M. SHAUL, M.D., New York, New York

Discussers— 3:55-4:30  
D. B. PALMER, D.V.M., Minneapolis, Minnesota

C. H. COVAULT, D.V.M., Ames, Department of Medicine, Veterinary Division, Iowa State College

## GENERAL SESSION

Friday Morning, May 16  
Main Ball Room

Address: 9:00-9:30  
Clinical Types and Treatment of Nonspecific Ulcerative Colitis

RALPH C. BROWN, M.D., Chicago, Illinois,  
Clinical Professor of Medicine, Rush Medical College

Address: 9:30-10:00  
Management of Lymphedema  
WILLIAM C. BECK, M.D., Chicago, Illinois

Recess to Visit Exhibits 10:00-10:15

Address: 10:15-11:00  
Some Aspects of the Relation of the Kidneys to Cardiovascular Disease

MILTON C. WINTERNITZ, M.D., New Haven, Connecticut, Professor of Pathology, Yale University

Address: 11:00-11:30  
Sinus Trouble from the General Standpoint  
SAMUEL SALINGER, M.D., Chicago, Illinois  
Clinical Professor of Otolaryngology, Loyola University School of Medicine

Report of House of Delegates and Installation of President 11:30-12:00

# Central States Society of Industrial Medicine and Surgery

## GENERAL SESSION

Tuesday Afternoon, May 13  
Main Ball Room—Hotel Blackhawk  
Symposium on Trauma

Address: 1:30-2:00

Primary Care of Traumatic Wounds  
LEWIS M. OVERTON, M.D., Des Moines  
Discusser—  
EMORY B. NEFF, M.D., Moline, Illinois

Address: 2:00-2:30

Traumatic Injuries of the Chest  
WILLARD VAN HAZEL, M.D., Chicago, Illinois,  
Associate Professor of Surgery, University of Illinois, College of Medicine

Discusser—  
JOHN B. MOORE, M.D., Benton, Illinois

Address: 2:30-3:00

Peripheral Neuritis Following the Use of Serum  
JOHN L. GARVEY, M.D., Milwaukee, Wisconsin,  
Clinical Professor of Neurology, Marquette University School of Medicine

Discusser—  
CLARENCE E. VAN EPPS, M.D., Iowa City

Address: 3:00-3:30

Fractures of the Patella Based on a Study of 554 Cases  
J. E. M. THOMSON, M.D., Lincoln, Nebraska

Discusser—  
DOUGLAS N. GIBSON, M.D., Des Moines

Address: 3:30-4:00

Compensation Evaluation  
OLIVER J. FAY, M.D., Des Moines

Discusser—  
DON NEAL, M.D., Springfield, Illinois

Address: 4:00-4:30

Early Management of Fractures of Long Bones  
WILLIAM R. CUBBINS, M.D., Chicago, Illinois,  
Clinical Professor of Bone and Joint Surgery, Loyola University School of Medicine

Discusser—  
JAMES A. JACKSON, M.D., Madison, Wisconsin

Tuesday Evening

Dinner—6:30 p. m.

Address: The Relationship of the New Antiseptics to the Treatment of Infected Wounds and Septicemia

H. WINNETT ORR, M.D., Lincoln, Nebraska

Wednesday Evening, May 14  
**MILITARY SURGEONS' DINNER**  
 Main Ball Room—Hotel Blackhawk  
 Dinner—6:30 p. m.

## Address:

BRIGADIER-GENERAL SHELLEY U. MARIETTA,  
 M.D., Washington, D. C., Assistant Surgeon  
 General, United States Army.

Wednesday Evening, May 14  
**SMOKER**  
 Main Ball Room—Hotel Blackhawk  
 8:30 p. m.

Thursday Evening, May 15  
**ANNUAL BANQUET**  
 Main Ball Room—Hotel Blackhawk  
 6:30 p. m.

## Toastmaster:

GEORGE B. CROW, M.D., Burlington

## President's Address:

FRANK P. MCNAMARA, M.D., Dubuque

## President-Elect's Address:

EARL B. BUSH, M.D., Ames

## Introduction of Guest Speakers and Section Chairmen

**SPECIAL MEETINGS**

Central States Society of Industrial Medicine and  
 Surgery

Tuesday, May 13

Main Ball Room, Hotel Blackhawk

Directors' Meeting—Pompeian Room, Hotel Black-  
 hawk, 9:00 a. m.

Luncheon—Pompeian Room, Hotel Blackhawk  
 12 noon

Program—Main Ball Room, Hotel Blackhawk,  
 1:30 p. m.

Dinner—Main Ball Room, Hotel Blackhawk,  
 6:30 p. m.

Iowa Alumni Association Luncheon  
 Wednesday, May 14  
 Pine Room, Hotel Blackhawk, 12:15 p. m.

Iowa X-ray Club Luncheon  
 Wednesday, May 14  
 Pompeian Room, Hotel Blackhawk, 12:15 p. m.

Ophthalmology-Otolaryngology Dinner  
 Wednesday, May 14  
 Pine Room, Hotel Blackhawk, 6:15 p. m.  
 All members of the Section invited.

Northwestern University Alumni Luncheon  
 Thursday, May 15  
 Pompeian Room, Hotel Blackhawk, 12:15 p. m.

Iowa Orthopedic Society Luncheon  
 Thursday, May 15  
 Mirror Room, Hotel Blackhawk, 12:15 p. m.

Eye, Ear, Nose and Throat Section Luncheon  
 Friday, May 16  
 Blue Room, Hotel Blackhawk, 12:15 p. m.

**Section Chairmen**

Section on Medicine—  
 Chairman, CLIFFORD R. WATKIN, M.D., Sioux City

Section on Surgery—  
 Chairman, FRANK R. PETERSON, M.D., Iowa City

Section on Ophthalmology, Otology and Rhinolaryn-  
 gology—  
 Chairman, ELMER P. WEIH, M.D., Clinton

Section on Obstetrics—  
 Chairman, ROY I. THEISEN, M.D., Dubuque

**State Society  
 of  
 Iowa Medical Women  
 AND  
 AMERICAN MEDICAL WOMEN'S  
 ASSOCIATION—Branch 19**

Wednesday, May 14, 1941  
 Lend-a-Hand Club  
 105 South Main Street  
 Davenport, Iowa

**LUNCHEON  
 12:15 p. m.**

Address of Welcome—  
 CHARLOTTE ROSENDORFF, M.D., LeClaire

President's Address—  
 ROSE BUTTERFIELD, M.D., Indianola

Business Meeting  
 Adoption of By-Laws

**DINNER  
 6:00 p. m.**

Business Meeting  
 President's Address—  
 PAULINE V. MOORE, M.D., Iowa City

Address—  
 Functional Bleeding—Non-malignant—  
 KATHERINE SUTTER KRENNING, M.D., Davenport

Address—  
 X-ray Treatment in General Practice—  
 AILEEN MATHIASSEN, M.D., Des Moines

Case Report—  
 Chronic Inversion of the Uterus—  
 ARLINE M. BEAL, M.D., Davenport

Informal Discussion

**Committee on Arrangements**  
 ARLINE M. BEAL, M.D., 520 First National Bank  
 Building, Davenport, Iowa



**HOUSE OF DELEGATES**

Auditorium, Peoples Light Building

Wednesday, May 14, 1941

3:30 p. m.

Roll Call

Approval of Minutes of Friday Morning Session, 1940

Report of Secretary

Report of Treasurer

Report of Board of Trustees

Report of Council

Report of Delegates to the American Medical Association

Reports of Standing Committees of the House of Delegates

Committee on Constitution and By-Laws—

JOHN H. HENKIN, Sioux City, Chairman

Committee on Finance—

ERNEST C. MCCLURE, Bussey, Chairman

Committee on Medical Economics—

ERNEST E. SHAW, Indianola, Chairman

Committee on Medical Education and Hospitals—

FELIX A. HENNESSY, Minneapolis, Chairman

Medicolegal Committee—

FRANK A. ELY, Des Moines, Chairman

Committee on Necrology—

JAMES G. MACRAE, Creston, Secretary

Committee on Publications—

LEE F. HILL, Des Moines, Editor

Committee on Public Policy and Legislation—

FRED MOORE, Des Moines, Chairman

Reports of Special Committees of the House of Delegates

Baldrige-Beye Memorial Committee—

WILLIS M. FOWLER, Iowa City, Chairman

Committee on Child Health and Protection—

HAROLD E. FARNSWORTH, Storm Lake, Chairman

Fracture Committee—

DONALD C. CONZETT, Dubuque, Chairman

Historical Committee—

WALTER L. BIERRING, Des Moines, Chairman

Life Membership Committee—

Medical Library Committee—

JEANNETTE DEAN-THROCKMORTON, Des Moines, Librarian

Medical Preparedness Committee—

THOMAS F. SUCHOMEL, Cedar Rapids, Chairman

Committee on Military Affairs—

ROBERT S. SHANE, Pilot Mound, Chairman

Committee on Pneumonia Control—

FRED M. SMITH, Iowa City, Chairman

Committee on Public Relations—

HERBERT E. STROY, Osceola, Chairman

Committee on Scientific Exhibits—

LEWIS M. OVERTON, Des Moines, Chairman

Woman's Auxiliary Advisory Committee—

JAMES C. HILL, Newton, Chairman

Reports of Committees of the Council

Speakers Bureau Committee—

JOSEPH B. PRIESTLEY, Des Moines, Chairman

Cancer Committee—

M. O. HENNESSY, Council Bluffs, Chairman

Women's Field Army—

MRS. A. V. O'BRIEN, Iowa City, Commander

Tuberculosis Committee—

J. CARL PAINTER, Dubuque, Chairman

Committee on Industrial Health—

JAMES E. REEDER, Sioux City, Chairman

Memorials and Communications

New Business

Election of Committee on Nominations

Friday, May 16, 1941

Pine Room, Hotel Blackhawk

7:30 a. m.

Roll Call

Reading of Minutes

Report of Committee on Nominations

Election of Officers

Reports of Committees

Unfinished Business

New Business

Announcement of Committees

Adjournment

**ENTERTAINMENT**

Tuesday, May 13

Afternoon

Davenport Country Club

Pre-Convention Golf Tournament and Dinner

Wednesday, May 14

12:15 p. m.

American Medical Women's Association  
andState Society of Iowa Medical Women  
Luncheon and Program

Lend-a-Hand Club, 105 South Main Street

3:30-5:00 p. m.

Woman's Auxiliary and Visiting Women

Musical and Tea

Municipal Art Gallery

120 West Fifth Street

6:00 p. m.

American Medical Women's Association  
andState Society of Iowa Medical Women  
Dinner and Program

Lend-a-Hand Club, 105 South Main Street

8:00 p. m.

Woman's Auxiliary and Visiting Women

Bridge Party

Blue Room, Hotel Blackhawk

8:30 p. m.

Stag and Smoker

Main Ball Room

Hotel Blackhawk

Thursday, May 15

12:30 p. m.

Woman's Auxiliary Luncheon

Outing Club

All Visiting Ladies Invited

6:30 p. m.

Annual Banquet, Ball Room

Hotel Blackhawk

Physicians, Their Wives and Guests

# SCIENTIFIC MOVING PICTURES

## Lobby Floor--Hotel Blackhawk

- Varicose Veins; Their Treatment by Modern Combined Ligation and Injection Treatment (Color)  
H. O. McPheeters, M.D., Minneapolis, Minnesota
- Diagnostic Procedures in Tuberculosis (Sound)  
National Tuberculosis Association, New York, New York
- The Diagnosis and Treatment of Syphilis  
American Medical Association, Chicago, Illinois
- Sterility, Its Causes, Investigation and Treatment (Color)  
Samuel L. Siegler, M.D., Brooklyn, New York
- Unilateral Cleft Lips and Cleft Palate  
Louis W. Schultz, M.D., Chicago, Illinois
- Bilateral Cleft Lips  
Louis W. Schultz, M.D., Chicago, Illinois
- The Surgical Management of Congenital Pyloric Stenosis  
Grover C. Penberthy, M.D., Detroit, Michigan
- Treatment of Fractures of the Neck of the Femur  
Paul B. Magnuson, M.D., Chicago, Illinois
- Value of Laboratory in Diagnosis and Treatment of Syphilis  
R. A. Frary, M.D., Lincoln, Nebraska
- Posterior Gastro-enterostomy; No Clamp Technique (Color)  
Joseph Weinberg, M.D., Omaha, Nebraska
- Subtotal Thyroidectomy (for primary hyperthyroidism)  
The Lahey Clinic, Boston, Massachusetts
- Hernioplasty (modified Bassini technic for the cure of indirect inguinal hernia) (Color)  
Mims Gage, M.D., Tulane University School of Medicine, New Orleans, Louisiana
- Subtotal Gastrectomy (for gastric ulcer) (Color)  
William F. Rienhoff, Jr., M.D., Johns Hopkins Hospital, Baltimore, Maryland
- Obstructive Resection (with complementary cecostomy) (Color)  
Fred W. Rankin, M.D., Lexington, Kentucky
- Resection of the Colon (and primary end-to-end anastomosis with complementary cecostomy) (Color)  
Fred W. Rankin, M.D., Lexington, Kentucky
- Combined Abdominoperineal Resection (for carcinoma of the rectum) (Color)  
Fred W. Rankin, M.D., Lexington, Kentucky
- Vaginal Hysterectomy (clamp method for uterine prolapse) (Color)  
Louis E. Phaneuf, M.D., Boston, Massachusetts
- Abdominal Complete Hysterectomy (for fibroids) (Color)  
Arthur H. Curtis, M.D., Northwestern University Medical School, Chicago, Illinois
- Vaginal Repair (of systocele and rectocele) (Color)  
Arthur H. Curtis, M.D., Northwestern University Medical School, Chicago, Illinois
- Transverse Cervical Cesarean Section (Color)  
Louis E. Phaneuf, M.D., Boston, Massachusetts
- Surgical Treatment of Varicose Veins and Ulcers (ligation with segmented retrograde sclerosis of the saphenous vein) (Color)  
Gerald H. Pratt, M.D., New York Postgraduate Medical School and Hospital, New York
- Esophageal Diverticulum (Lahey's two stage operation for diverticula of the pulsion type)  
The Lahey Clinic, Boston, Massachusetts
- Hemorrhoids and a Method of Hemorrhoidectomy  
Frederick B. Campbell, M.D., Kansas City, Missouri
- Joint Debridement (experimental and clinical findings in the surgical treatment of arthritis)  
Paul B. Magnuson, M.D., Northwestern University Medical School, Chicago, Illinois
- Traumatic Surgery of the Extremities  
Yale University School of Medicine
- Knee Surgery  
Dennis R. W. Crile, M.D., Augustana Hospital, Chicago, Illinois
- Breech Extraction With Forceps  
G. C. Richardson, M.D., and W. B. Serbin, M.D., Northwestern University Medical School and Wesley Hospital, Chicago, Illinois
- Mid-Forceps Delivery  
G. C. Richardson, M.D., and W. B. Serbin, M.D., Northwestern University Medical School and Wesley Hospital, Chicago, Illinois
- A Low Cervical Cesarean Section  
Eldon W. Tice, M.D., Methodist Hospital, Los Angeles, California
- Miscellaneous Pediatric Cases  
H. K. Tenny, M.D., University of Wisconsin Medical School and University Hospital, Madison, Wisconsin
- The Care of the Premature Infant  
Julius H. Hess, M.D., University of Illinois, College of Medicine, Chicago, Illinois
- Lesions of the Breast (Color)  
Drs. Tyler and Simonds, Omaha, Nebraska
- British War Films (Auxiliary forces in training for war; effect of the war on the life of the people)  
Gordon Knox, Princeton, New Jersey





## Davenport—Our 1941 Host City

The Ninetieth Annual Session of the Iowa State Medical Society will be held in Davenport, May 14, 15 and 16. Many will remember the fine convention held in eastern Iowa's largest city in 1935, and will look forward with pleasure to meeting again in this hospitable convention city. Others will enjoy for the first time, a convention in "Iowa's port of hospitality on the beautiful Mississippi".

Visitors will find Davenport a city bustling with business activity. As the largest member of the Quad-City group, Davenport is enjoying an enviable position among mid-western cities with regard to retailing, wholesaling and manufacturing activity, and is rapidly assuming its place as one of the most important commercial and industrial centers in the Mississippi Valley. National defense production is serving as an added stimulant to business progress. The increased activity in Uncle Sam's largest munitions manufacturing plant, the Rock Island Arsenal, has been a big factor in Davenport's development. Located on an island in the Mississippi River directly between Davenport and Rock Island, the Arsenal is employing approximately 8,000 men at the present time, and its weekly payroll is an important item in the economic life of the Quad-Cities.

Davenport's interest as one of Iowa's "busiest cities" is only one of the reasons the Iowa State Medical Society members will enjoy their visit to the 1941 host city. It has many points of historical interest for its visitors, too. It was in 1816 that Fort Armstrong was built on the island on which the Arsenal is now located. At the end of this island stands a replica of the old block house, marking the location of this historic fort. In 1833, Antoine LeClaire purchased a quarter section of land on which is now located the principal business section of Davenport, and it was in 1836 that a steamboat load of

pioneers from St. Louis bought lots in this section for prices varying from \$300 to \$600. Antoine LeClaire and George Davenport built the first hotel on one of these lots with lumber which was brought from Cincinnati by water. The home of Antoine LeClaire, built in 1833, has been restored and is now situated near the site where the first tie of the first trans-Mississippi railroad was laid on September 1, 1853. LeClaire was largely responsible for the building, in 1838, of St. Anthony's Church which still stands at Fourth and Main Streets.

The "Burtis House", a noted hotel, built in 1858, served as a military capital of Iowa during the Civil War, because the telegraph lines did not reach the capital of the state. From an upper window of this hotel, William Penn Clark watched his convoy, John Brown and a carload of colored refugees, pull out across the new bridge to Canada and freedom. At 218 East Second Street stood, until recently, the home built by Dr. John Emerson, whose family owned the famous slave, Dred Scott.

Up East River Street an old railroad embankment indicates the spot where pioneer trains used to head for the first bridge. The ruins of a pier are still visible on the Rock Island shore. Here was opened to traffic in April, 1856, the first bridge to span the Father of Waters. Around this bridge centered the historical clash of rail and river interests. Rivermen sought frantically to secure the removal of the bridge because of its obstruction to navigation. Abraham Lincoln was an attorney for the bridge people, and spent some time here, studying the location and the speed of the current in the Mississippi.

Just a few miles east of Davenport, where Bettendorf is now located, Andrew Carnegie spent his sum-

mer vacation when he was a young brass pounder. At 517 West Seventeenth Street was located the first college to be opened west of the Mississippi, then called Iowa College, later Grinnell College. This college was later moved to Grinnell, Iowa.

Credit Island, now one of Davenport's beautiful parks, was the battle field where sixty British soldiers with three small cannon and numerous Indian allies fought 334 United States soldiers commanded by Major Zachary Taylor on September 6, 1814. This is the only international battle site in Iowa.

At Second and Main Streets, on the corner now occupied by the Putnam Building, stood for many years the LeClaire Hotel, outstanding summer resort of the old days, where visitors from St. Louis and New Orleans danced and enjoyed many happy hours.

Convention visitors will now find three bridges spanning the Mississippi, connecting Davenport with her sister cities in Illinois. The Rock Island Centennial bridge, completed less than one year ago, is the only four-lane bridge on the upper Mississippi. The government bridge which crosses the Rock Island arsenal remains the only free bridge on the upper Mississippi. Just below the government bridge is located the \$6,000,000 roller dam, the largest dam of this type in the world. Between the dam and the arsenal island are two parallel locks, one 600 feet in length and the other 360 feet in length. Both are the same width as the Panama Canal, 110 feet. Through these locks passes an increasing amount of river traffic. Above the dam, the waters of the Mississippi are impounded in a beautiful lake which has become one of the favorite recreation centers of this area. Sail boating is one of the favorite pastimes and many white-winged yachts, power-driven cruisers and fast motor boats provide excitement for both passengers and spectators during the summer season.

Davenport's eighteen square miles include many fine homes, beautiful tree-lined avenues, excellent schools, and parks of unusual scenic beauty. Six new elementary schools, constructed at a cost of \$3,000,000, and opened last year, represent the most modern in educational facilities.

Visitors who enjoy golf will have their choice of several sporty fairways. The Davenport Country Club, site of the Western Open a few years ago, is one of the finest courses in the middle west. The Credit Island 18-hole course is fairly level and well-trapped. Duck Creek is an 18-hole hill-and-dale course for those who prefer more strenuous exercise.

A trip through the Davenport Municipal Art Gallery, where the old masters vie with moderns will provide a satisfying treat for art lovers. The Davenport Public Museum will delight visitors who enjoy seeing unusual collections of early Indian and mound builders relics and other treasures gathered from far places.

Those who plan to attend the 1941 convention of the Iowa State Medical Society may look forward to a very pleasant and interesting stay in the city "where the west begins." A most cordial reception awaits you.

## ARRANGEMENTS COMMITTEE

FRANK P. McNAMARA.....	Dubuque
ROBERT L. PARKER.....	Des Moines
HAROLD J. MCCOY.....	Des Moines
GEORGE BRAUNLICH.....	Davenport
HARRY H. LAMB.....	Davenport

## LOCAL COMMITTEES

### Arrangements

WILLIAM C. GOENNE, General Chairman

Clinics.....	LEO H. LADAGE
Room Supervision.....	MARTIN D. OTT
Commercial Exhibits.....	CHARLES E. BLOCK
Scientific Exhibits.....	FRED H. LAMB
Scientific Movies.....	PAUL A. WHITE
Information.....	PRESTON E. GIBSON

### Entertainment

HARRY H. LAMB, General Chairman

Smoker.....	JOHN H. SUNDERBRUGH
Golf.....	WALTER A. MATTHEY
Banquet.....	GORDON F. HARKNESS
Automobiles.....	ROSCOE P. CARNEY
Woman's Auxiliary.....	MRS. FRED H. LAMB
Reception.....	JAMES DUNN

## SEVENTH ANNUAL TOURNAMENT, IOWA STATE MEDICAL GOLF ASSOCIATION May 13, 1941

The Seventh Annual Tournament of the Iowa State Medical Golf Association will be held in Davenport at the Davenport Country Club, Tuesday, May 13, 1941, with play starting at 1:30 p. m. Dr. Walter A. Matthey of Davenport is the local chairman of the arrangements committee for the event.

Dr. Edward L. Emerson of Muscatine is holder of the traveling cup, won in 1940 at Des Moines. The cup was donated by the Board of Trustees of the Iowa State Medical Society in 1939, and was won by Dr. James C. Donahue of Centerville in that year. We urge every doctor who even thinks he is a golfer to come and try your luck with us. As usual, there will be prizes for everyone. All physicians are eligible, regardless of age, weight or color. Even the port side golfers are urged to attend and try their skill with the regular golfers. Do not depend on expectations of playing golf hereafter, or wait too late in life to play this outdoor game which will help to prevent your gallbladder stasis, etc.

We also promise you a fine dinner with very few speeches (possibly some stories) and suitable communion and fellowship for the evening. Those in charge are working hard to make this annual get-together a real success. Meet us in Davenport.

John S. Deering, M.D., Onawa, President  
Charles A. Nicoll, M.D., Panora, Secretary



# WOMAN'S AUXILIARY

## to the

# Iowa State Medical Society

Organized May 9, 1929, Des Moines, Iowa

TWELFTH ANNUAL MEETING

Headquarters—Hotel Mississippi

Davenport, Iowa

### PROGRAM

Wednesday, May 14, 1941

- 9:30 a. m. Registration—  
Hotel Mississippi
- 10:30 a. m. Preconvention Board Meeting for  
Board Members and County Auxil-  
iary Presidents
- 1:00 p. m. Luncheon—Hotel Mississippi  
For Board Members and County  
Auxiliary Presidents
- 3:30 p. m. Tea and Musicales, Municipal Art Gal-  
lery
- 8:00 p. m. Bridge Party, Hotel Blackhawk

Thursday, May 15, 1941

Hotel Mississippi

9:15 a. m.

Lend-A-Hand Club

Mrs. E. T. Warren President, Presiding

Invocation—

MRS. J. C. DECKER, Sioux City

Address of Welcome—

MRS. W. C. GOENNE, Davenport

Response—

MRS. W. R. HORNADAY, Des Moines

Reading of Minutes—

Announcement of Committees—

President's Message—

Reports of Officers and Chairmen of Standing Com-  
mittees—

Reports of County Presidents—

Presentation of Membership Cup—

MRS. JAMES A. DOWNING, Des Moines

Report of Winning Essay—

MRS. W. A. SEIDLER, Jamaica

Registration Committee—

MRS. EDWARD J. HARNAGEL, Des Moines

Announcements—

MRS. F. H. LAMB, Davenport, Chairman of Com-  
mittee on Arrangements

Adjournment

### PROGRAM

12:30 p. m.

Luncheon, Outing Club

Greetings—

MRS. HOWARD A. WEIS, Davenport

Greetings—

FRANK P. MCNAMARA, M.D., Dubuque  
President, Iowa State Medical Society

Greetings—

EARL B. BUSH, M.D., Ames  
President-Elect, Iowa State Medical Society

Symposium—

Cancer Control—M. C. HENNESSY, M.D., Council  
Bluffs

Tuberculosis—F. P. WINKLER, M.D., Sibley

Crippled Children—D. C. CONZETT, M.D., Du-  
buque

League for the Hard of Hearing—J. A. DOWNING,  
M.D., Des Moines.

Summary—JAMES C. HILL, M.D., Newton, Chair-  
man of Advisory Committee

Address on National Defense—

MAJOR A. K. STILES, Rock Island, Illinois

3:00 p. m.

Closing Session, Outing Club

Reading of Minutes—

Report of Resolutions Committee—

Report of Nominations Committee—

Election of Officers—

Installation of Officers—

MRS. CHANNING G. SMITH, Granger

Election of Delegates to National Convention

Adjournment

4:00 p. m.

Postconvention Board Meeting

6:30 p. m.

BANQUET, HOTEL BLACKHAWK

Physicians, Wives and Guests

This program, social and business, is for all visit-  
ing women. All eligible women are urged to become  
members.

## TAKING AND PRESERVING BLOOD SPECIMENS FOR ALCOHOL ANALYSIS\*

T. U. MARRON, M.S., Des Moines

In view of proposed legislation legalizing the compulsory taking of blood specimens for alcohol determination, physicians throughout the state will be more frequently called upon for their part in this procedure. A general knowledge of the conditions affecting the maintenance of alcohol concentration in the blood after it is drawn, as well as of those factors which may lead to erroneous analytic conclusions, is necessary on the part of the physician who takes the blood just as much as on the part of the chemist who performs the analysis.

We may classify these factors as follows: the skin disinfectant and the instruments used in taking the sample; the temperature and surroundings of the sample; and the container, anticoagulant and preservative used.

1. Disinfectants used in sterilizing the skin before venipuncture should never be of a volatile organic type, inasmuch as even very small amounts may get mixed with the blood and cause gross error in the analysis. Even such an apparently harmless agent as aqueous merthiolate is to be avoided, since it contains ethanolamine, which hydrolyzes to alcohol. A 1:1000 solution of mercury bichloride in water is probably the only common disinfectant which is entirely safe to use. In the absence of this, it is best to use no disinfectant at all and simply wash the skin with soap and water, rinse and dry. Needles should be sterilized by dry heat, or by boiling followed by sufficient dry heat to remove any moisture present. The syringes used need not be sterile, but must be free from organic contaminants. A simple way of assuring this is to rinse the syringe in plain water and dry it directly in a flame. It is self-evident that neither actual alcohol nor any substance similar to it should be used in this sterilization.

2. The air of the room in which the sample is taken should be free from formaldehyde vapors. Even traces of this substance, absorbed by the blood as it is transferred from syringe to container, will invalidate the results of the test. The container should be a chemically clean glass vial, stoppered with a cork which has not been previously used or stored in contaminating odors. At least five cubic centimeters, preferably ten cubic centimeters, of the blood should be transferred to

this container. If not deliverable immediately to the chemist, storage at refrigerator temperature is advisable. In order that adequate analysis may be performed, at least five cubic centimeters of unclotted blood is necessary, and it is better to have twice this amount in case the legal question may arise concerning the availability of the sample for analysis by a defendant. Full identification of the sample must be made and recorded.

3. We have found the best preservative to be a mixture of sodium fluoride and potassium or sodium oxalate.

Sodium fluoride, sodium or potassium oxalate and a mixture of sodium fluoride and potassium oxalate have been used extensively. The fluoride-oxalate mixture has the advantage of mixing with blood more rapidly than sodium fluoride alone. Fluoride strongly inhibits the physiologic functions of many organisms, and its use is recommended for that reason. Oxalate has probably no inhibitory effect.

If a relatively long period has elapsed between the time of securing a blood specimen and the time of analysis, or if a second analysis is ordered at a later date, the expert witnesses in a court trial may be requested to give an opinion on the validity of the results of such determinations. Anticipating this type of request in court, we present our data from alcohol determinations performed on blood specimens stored with oxalate, fluoride, or both, for periods of varying lengths.

### MATERIALS

All blood specimens in these data were taken at this laboratory at the request of law enforcement officials for alcohol determinations. The skin was sterilized with 1:1000 bichloride of mercury solution in water, and the blood was drawn from a cubital vein. The syringes and vials, as well as all glassware used in handling the blood at all times, were not sterilized, but were dry and chemically clean. New corks were used in the vials. The anticoagulant or preservative is indicated in the tables. Specimens were kept in a refrigerator unless otherwise specified in the tables.

### METHODS

The alcohol in the blood samples was determined by the use of two methods.

*Macro (Distillation).* Method outlined by Johnston and Gibson<sup>1</sup> with the following modifications: 30 cubic centimeters of methyl orange and 70 cubic centimeters of 50 per cent sulfuric acid are used in the red reducing fluid; the distilling apparatus is of a slightly different design using the same principle.

\*From the Department of Pathology, Iowa Lutheran Hospital, Des Moines.



*Micro (Desiccation).* The author's adaptation of the macro method directly to the desiccation principle.<sup>2</sup>

These two procedures serve to present our data by two of the most common types of methods for blood alcohol determinations.

#### DISCUSSION AND RESULTS

Since alcohol is a labile substance in drawn blood specimens, precautions must be taken to preserve its original concentration. We know from the length of time it takes to obtain positive blood cultures in bacteriologic routine that blood itself resists bacterial changes for one to two days. After this period an artificial preservative must be relied upon. Since it is desirable to use whole blood, a preservative with anticoagulant properties is ideal. Furthermore, this agent should be of an inorganic nature, or of such chemical composition that it will never interfere with common methods for alcohol determination.

Sodium fluoride, sodium oxalate or sodium citrate have been suggested as anticoagulants.<sup>3</sup> It is known that some living organisms can utilize citrate in a manner similar to carbohydrate. Therefore, it is possible for bacteria in citrated blood to form organic compounds indistinguishable from alcohol by the common analytic procedures. As a matter of fact, we have seen normal blood containing citrate develop the equivalent of 20 to 30 milligram per cent ethanol in one to two months; but no qualitative work was done to identify the substance produced. Citrate is not dependable for use in specimens to be kept more than several days.

In examination of the following tables, plus or minus values up to five in the columns indicating percentage of change must be considered in the range of allowable error by these methods, and therefore, not significant. All analyses were run in duplicate and by the "macro" method unless

"micro" appears above a column indicating the use of the latter method.

The values in Table I indicate that when only potassium or sodium oxalate is used as the anticoagulant, analyses on specimens older than six days might be subject to great error.

When sodium fluoride is present in blood specimens kept as long as four months, analyses at any time during this period will probably agree within  $\pm 12$  per cent with the original value. This can be seen in Table II, with rare exceptions. The exceptions are important to note, however. Small quantities of blood kept in relatively large containers were always found subject to gross changes in alcohol content, regardless of preservative.

TABLE II

The effect of age on the alcohol concentration in blood specimens containing sodium fluoride alone.

Specimen	Days Aged in Refrigerator	Original Alcohol Concentration (mg. %)	Alcohol Concentration After Aging (mg. %)	Change (%)	After Further Aging of 1 Month at Room Temperature	
					Alcohol Concentration (mg. %)	Change (%)
B A	5	188	174	-7.5	...	.....
B B	32	230	239	+3.9	...	.....
B C	46	207	210	+1.4	...	.....
B D	77	283	283	0.0	...	.....
B E*	78	80	67	-16.3	...	.....
B F*	78	44	26	-40.9	...	.....
B G	90	250	229	-8.4	211	-15.6
B H**	95	355	369	+3.9	359	+1.2
B I	100	250	242	-3.2	236	-5.6
B J	120	342	332	-2.9	308	-10.0
B K	120	311	296	-4.8	276	-11.3
B L**	120	222	242	+9.0	181	-18.5
B M	130	308	308	0.0	282	-8.4

Containing potassium oxalate alone						
C A	1	5	5	0.0	5	0.0
C B	6	278	245	-11.9	237	-14.7
C C	16	150	155	+3.3	125	-16.7
C D	90	134	119	-11.2	92	-31.2
C E	102	211	175	-17.0	171	-19.0
C F	120	279	241	-13.6	239	-14.3

\*Small amount of blood stored in large container.

\*\*Blood inoculated with bacteria isolated from these specimens and incubated at room temperature for three weeks was found to have an increase in alcohol-like substance from 0 to 11 mg. %

TABLE I  
The effect of age on the alcohol concentration in blood specimens containing potassium oxalate alone.

Specimen	Days Aged in Refrigerator	Original Alcohol Concentration (mg. %)	Alcohol Concentration After Aging (mg. %)	Change (%)
D A	6	318	300	-5.7
D B	8	19	18	-5.3
D C	8	74	83	+12.1
D B	6	278	245	-11.9
D D	10	135	134	-0.7
D C	16	150	155	+3.3
D E	21	197	250	+26.9
D F	25	65	73	+12.3
D G	28	152	170	+11.8
D H	30	242	275	+13.6
D I	55	211	175	-17.1
D J	81	158	150	-5.1
D K	90	134	119	-11.2
D L	120	279	241	-13.6
D M	175	160	27	-83.1

According to the data in Table II it appears that fluoride preserved specimens are superior to those containing only oxalate in resistance to alcohol change when stored at room temperature. Sodium fluoride is usually added in the powder form to blood, and good mixing is achieved only by vigorous shaking. That some of the specimens listed in Table II were poorly mixed with the fluoride may help explain some of the extreme changes on aging.

Containers for the specimens listed in Table III had crystals of fluoride and oxalate deposited inside by evaporating the water from a solution containing both substances. About 20 milligrams of each, sodium fluoride and potassium oxalate were used in vials of 15 cubic centimeters capacity. That the preservative and anticoagulant, sodium

fluoride, enhanced by potassium oxalate, will insure relatively unchanged alcohol concentration in blood specimens stored for nearly three months is borne out by the data in Table III. No specimen had a significant change before forty-three days. The significant changes which did occur were all decreases and none was greater than ten per cent.

TABLE III

The effect of age on the alcohol concentration in blood specimens containing sodium fluoride and potassium oxalate.

Specimen	Days Aged in Refrigerator	Original Alcohol Concentration (mg. %)	Alcohol Concentration After Aging (mg. %)	Change (%)
A	3	209	212	+ 1.4
B	3	221	212	- 4.1
C	5	216	217	+ 0.5
D	8	160	168	+ 5.0
E	24	181	182	+ 0.5
F	27	243	245	+ 0.8
G	30	218	225	+ 3.2
H	32	289	284	- 1.7
I	32	287	293	+ 2.1
J	35	278	284	+ 2.2
K	40	290	286	- 1.4
L	43	228	214	- 6.1
M	46	267	240	- 10.0
N	47	248	238	- 4.0
O	48	175	163	- 6.9
P	59	321	307	- 4.4
Q	62	153	139	- 9.2
R	71	205	194	- 5.5
S	79	219	210	- 4.1
T	80	232	221	- 4.7

When alcohol was determined in aged specimens by both the distillation and desiccation methods many discrepancies were found. These are listed in Table IV.

TABLE IV

Comparison of alcohol values for stored specimens by distillation and desiccation methods.

Specimen	Anti-Coagulant	Days Aged in Refrigerator	Original Alcohol Concentration Macro (mg. %)	Alcohol Concentration After Aging			
				Macro (mg. %)	Change (%)	Micro (mg. %)	Change (%)
EA	Oxalate	61	173	151	-12.7	133	-23.0
EB	"	34	204	196	-3.9	177	-13.2
EC	"	120	279	241	-13.6	275	-1.4
ED	"	124	242	226	-6.6	235	-2.9
EE	"	60	134	119	-11.2	130	-3.0
EF	"	16	150	155	+3.3	130	-13.3
EG	"	6	278	245	-11.9	283	+1.8
EH	"	20	154	146	-5.2	117	-22.0
EI	"	55	211	175	-17.0	187	-11.4
EJ	Fluoride	90	250	229	-8.4	229	-8.4
EK	"	120	311	296	-4.8	288	-7.4
EL	"	100	250	242	-3.2	240	-4.0
EM*	"	78	82	79	-3.7	67	-18.3
EN	Fluoride and Oxalate						
		80	232	221	-4.7	229	-1.3
EO	"	62	153	139	-9.2	134	-12.4
EP	"	79	219	210	-4.1	211	-3.6
EQ	"	59	321	307	-4.4	332	+3.4
ER	"	43	228	214	-6.1	222	-2.6
ES	"	48	175	163	-6.9	168	-4.0
ET	"	40	290	286	-1.4	299	+3.1
EU	"	46	267	240	-10.0	267	0.0
EV	"	76	181	181	0.0	198	+9.4

\*Small quantity of blood in large container.

Since the two methods agree exactly on alcohol recovery from a standard solution or fresh blood specimens, the data in Table IV may be considered evidence that some alcohol changed from the

free state or was partially replaced by chemical substances detectable to a different degree by each of the two methods. Many aged blood samples do have the aroma of esters or the unpleasant odors of organic amines. The methods generally available for alcohol determination are not entirely specific for ethanol, but have justifiable use since interfering substances are not found in fresh blood, or are immediately detectable when a specimen is opened.

Often a question arises concerning the production of a rise in the alcohol concentration by growth of organisms in blood samples. The following experiment shows that a rise in the alcohol reading can be encountered, but it is doubtful that the volatile substance generated is alcohol. An alcohol-free citrated blood sample was divided into six portions: two were inoculated with mother of vinegar; two, with an unidentified, pigmented, psychrophilic, gram-negative bacillus; and two were untreated. The mother of vinegar samples remained at room temperature; the others were refrigerated for the first week, then left at room temperature for the remaining period. The effects of the inoculations are as follows:

	Alcohol Equivalent		
	Macro 7 days	Macro 75 days	Micro 75 days
Citrated blood ....	5 mg. %	20 mg. %	0
Mother of vinegar blood..	30 mg. %	23 mg. %	0
Bacteria blood ....	12 mg. %	309 mg. %	25 mg. %

## SUMMARY

1. Precautions for obtaining and storing blood specimens for alcohol analysis are given.
2. A mixture of sodium fluoride and potassium oxalate was found to preserve blood specimens well for at least a month, and for longer periods with some change in the alcohol content of a certain percentage of the samples.
3. Tables are presented for various anticoagulants so that the expected changes may be anticipated.
4. Distillation and desiccation methods do not always agree as to the alcohol content of aged specimens.
5. The apparent alcohol content of specimens may increase as well as decrease. The nature of the substance included in the increase was not determined.

## BIBLIOGRAPHY

1. Johnston, G. W., and Gibson, R. B.: A distilling apparatus and a procedure for the determination of alcohol in blood and urine. *Jour. Lab. and Clin. Med.*, xxvi:399-401 (November) 1940.
2. Marron, T. U., and Hilbe, J. J.: A study of preserved blood specimens taken for alcohol determination. *Proc. Iowa Acad. Sc.*, in press.
3. Ladd, M., and Gibson, R. B.: The medico-legal aspects of the blood test to determine intoxication. *Iowa Law Rev.*, xxiv:191-267 (January) 1939.



## OBSTETRIC ANESTHESIA IN THE HOME\*

PAULINE V. MOORE, M.D., Iowa City

Labor in the primitive woman was relatively painless, but even the ancients are known to have administered narcotic potions during labor. In January, 1847, Sir T. Y. Simpson first used ether. In November of the same year he used chloroform, and immediately a storm of criticism was rained upon him from lay, professional and religious groups. Queen Victoria started women clamoring for it in 1853 after enjoying its benefits. In 1902, "twilight sleep" was first used in labor, and since then newspapers, periodicals and women's magazines have taken it as their special privilege and duty to give the general public a liberal education on analgesia and anesthesia during labor. Keeping far abreast of research and not allowing time for adequate testing, the laity has inveigled the obstetricians into many a pitfall with recently manufactured drugs. The laity has almost convinced the profession that "Hollywood deliveries" (complete unconsciousness from the end of the first pain until the beginning of the third or fourth postpartum day) are desirable and safe. I say, almost. Many are beginning to analyze the cause for the ever-increasing numbers of forceps deliveries, manual extractions and other operative procedures, and have correctly laid the cause at the door of over-indulging the patient with pain-relieving drugs.

Criteria for an ideal obstetric anesthetic were recently set forth by Dr. William F. Mengert at a meeting of the Johnson County Medical Society. These were as follows:

1. Eliminate, markedly reduce, or render the woman amnesic to pain during most of the first and all of the second stage of labor.
2. Leave unaffected the normal mechanisms of labor, especially uterine contractility, cervical dilatation and retraction.
3. Maintain the conscious ability of the woman to cooperate with her voluntary abdominal musculature.
4. Produce maximum effect during passage of the head over the perineum.
5. Offer no risk to either mother or child.

Of course there is no drug which has all these attributes, and a combination of several drugs in the hands of skilled, experienced physicians in a modern hospital with a trained hospital personnel can only approach this ideal.

In the home, this ideal is even more difficult to attain. If the obstetrician goes into a completely

modern home where the patient has provided for herself a hospital bed and nurse, and the physician takes with him a trained nurse and perhaps an assistant with a portable gas machine, the discussion of obstetrics in the home would be no different from that in the hospital. This ideal arrangement is rarely possible, and we usually consider a home delivery as one where working facilities are limited. The home may or may not have running water and electricity. There is usually only one doctor and one trained nurse, or a practical nurse, and a host of mothers-in-law, sisters and children, the last three of doubtful value. We must not forget to mention that the home may be just around the corner from the doctor's office, or it may be twenty-five miles by car and the rest of the way (any uncomfortable distance) by foot, by sled, by wagon or by horseback.

If the doctor plans to go to the home at the onset of the labor and to remain there throughout, he may wish to use some of the hypnotic group of drugs. These, as you know, produce a considerable degree of excitement and demand constant watching. Even if the physician is staying in the home with nothing else to do but watch the patient, it is unwise for him to do so. Nothing can alter the judgment of an obstetrician quite so much as wrestling with a completely amnesic patient for twelve hours while the husband stands by demanding that something be done.

Due to lack of assistance, the doctor wishes, first of all, not to prolong labor beyond its natural course, nor to increase the incidence of interference. He must, even at the expense of more pain for the mother, have a normal spontaneous delivery, if possible. Since this hypnotic group of drugs, including seconal (sodium propylmethylcarbinyl allyl barbiturate), nembutal (pentobarbital sodium), paraldehyde, etc., not only produce considerable excitement, but also prevent the patient from voluntarily assisting in the expulsive stage of labor, it is, I believe, unwise ever to use them in the home.

It is questionable whether first stage analgesia is ever desirable in the multipara in the home; but, in the primipara, especially in prolonged labor, morphine is sometimes indicated to give much needed rest. There is a great deal of discussion concerning the danger of morphine to the fetus, and for this reason many follow the generally accepted rule that the drug should not be injected within four to eight hours of the anticipated time of delivery. I believe, however, that in addition to this it is a good plan to give very small doses of morphine, repeating them until the desired analgesia is obtained, but stopping short of cyanosis,

\* Presented before the Forty-third Annual Meeting, State Society of Iowa Medical Women, Des Moines, May 1, 1940.

or too great slowing of the respiratory rate. Scopolamine, when given with morphine, increases the respiratory rate, counteracting to a certain degree the effect of morphine. It may produce some excitement. This, again, may be avoided by beginning with small doses and repeating if excitement is not apparent. The proper proportion is usually one part of scopolamine to twenty-five parts of morphine.

Second stage anesthesia in the home is, as before noted, limited by facilities. Gas anesthesia for most of us is impossible. Some few have portable nitrous oxide machines and nurses capable of administering it. However, ethylene and cyclopropane, highly explosive gases, are never safe for the home, nor can ether be used in all homes due to its explosive properties. Often one must work with kerosene lamps at each elbow and a coal or wood heating stove, glowing hot, only a few feet away. If these conditions do not exist, ether is fairly satisfactory. It should be given by the open method on any simple mask. At the beginning of the pain, forty-five to fifty drops of ether are poured on the mask, the patient breathes deeply of this two or three times, works with a pain, a few more drops are added, the patient again inhales and the mask is removed. This is repeated with each pain. Considerable relief is obtained, but the patient is never unconscious. For complete or surgical anesthesia in the home, ether is the only safe agent, especially if one must trust its administration to inexperienced persons.

Because of the small mask, the small quantity required, the almost immediate analgesic effect and not unpleasant odor, chloroform would seem to be the ideal anesthetic. However, there is immediate danger if an over-dose is given, or if it is given without sufficient air, and delayed danger (danger to liver) if it is given over a prolonged period. I find it very useful and safe in the second stage, especially for analgesia with each pain where the second stage is short, and it is often the only pain-relieving drug used during the entire labor if prolonged or deep anesthesia is not needed.

No paper on anesthesia would be complete today without a word concerning anoxemia, and especially is this true of obstetric anesthesia. At a recent meeting in Cedar Rapids, Dr. Ralph Waters, professor of anesthesiology at the University of Wisconsin Medical School, made the statement that if a baby was born alive and failed to breathe after delivery, the anesthetist was directly responsible; that a reasonable prolongation of labor was unimportant if the fetus was at all

times assured of adequate oxygen; and that the anesthetist should check the fetal heart tone constantly in order to relieve with pure oxygen any alteration in fetal heart rate. This again is only possible in a well equipped hospital or, at least, necessitates a trained anesthetist.

Schreiber\* says: "Careful examination of the paranatal records of mentally defective infants and children (for whom there was no history of inherited defect, infection, or trauma unassociated with birth) has disclosed a definite relationship between fetal oxygen want and the later neurologic defect. Since cerebral deficiency may occur as a result of cerebral anoxia, the controllable factors including asphyxia must be re-evaluated. Foremost among these are the optional drug and anesthetic agents used to produce analgesia and amnesia in the mother. The asphyxia resulting from the excessive use of drugs to produce unconscious labor is no less serious in its effects on the baby than that from any other cause. Any method of delivery which produces a defective infant has no compensation for the mother, the child or the physician".

I believe we depend too much on drugs for relief of pain in childbirth. Obstetric anesthesia begins, not with the first pain, but with the patient's first visit to the doctor's office; not with drugs, but with that certain something that makes a physician, "My Doctor". The few extra moments spent at each prenatal visit allaying fears and superstitions, and instilling confidence in the patient's mind will repay the physician many times. How often has each of us reached the obstetric floor or the door of a home to be met with loud wailing and screaming! A few minutes later the screaming woman has become smiling and calm, the result, not of drugs, but of a few words of explanation and the mere reassurance of the doctor's presence.

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## CONGENITAL DEFORMITIES (Report of a Case)

EMERSON J. STEENROD, M.D., Iowa Falls

Congenital deformities are usually multiple and present problems in diagnosis and management. Although many of the anomalies are only of academic interest every physician during his practice may encounter one or more which are amenable to surgical treatment. Early diagnosis and surgical intervention are necessary in some of these congenital deformities of the newborn infant.

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\*Schreiber, Frederic: Neurologic sequelae of paranatal asphyxia. *Jour. Ped.*, xvi:297-309 (March) 1940.



The following anomalies were observed in the same infant: an imperforate anus, myelocoele, external hydrocephalus, bilateral flaccid paralysis of the lower extremities, bilateral undescended testicles, and a fistula between the distal part of the colon and the anterior surface of the scrotum.

Imperforate anus and its sequelae may occur in many forms such as complete absence of the anus, an anus covered by a thin membrane, an anal pocket with atresia of the colon anywhere from the anus to the ileocecal valve. There may be fistulas that open into the urethra, along the scrotum, in the perineum, or into the postanal region. Ladd and Gross<sup>1</sup> reported 161 patients with congenital anomalies of the anus in 121,515 admissions to the Boston Children's Hospital. Approximately ten to twelve such anomalies are treated each year at that institution. In 73 patients, or 46 per cent of their series, other congenital anomalies were seen. Some of these children had as many as seven or eight malformations. In twelve of these children the other abnormality was directly responsible for the death. Ten of these twelve deaths were caused by congenital heart disease, atresia of the small intestine or atresia of the esophagus. The associated deformities are shown in the chart taken from the work of Ladd and Gross.

TABLE I. CONGENITAL ANOMALIES ASSOCIATED WITH IMPERFORATE ANUS.\*

Abnormality	Frequency of Occurrence
Congenital heart	8
Hair lip and cleft palate	3
Atresia of the esophagus	2
Hypertrophic pyloric stenosis	1
Atresia of the small intestine	3
Meckel's diverticulum	2
Anomalous mesentery	1
Stenosis of the cecum	1
Two appendices	1
Atresia of the colon	2
Transposition of the colon	1
Absent kidney and ureter	2
Polycystic kidneys	2
Horseshoe kidney	1
Ureteral valves	1
Exstrophy of the bladder	1
Patent urachus	1
Double penis	1
Hypospadias	4
Undescended testicles	2
Bifid scrotum	1
Inguinal hernia	1
Bicornate uterus	1
Atresia of the vagina	1
Septate vagina	3
Dermoid cyst of the ovary	1
Malformed vertebrae	2
Spina bifida	2
Pilonidal sinus	1
Meningocele	2
Supernumerary digit	1
Syndactylism	1
Absent thumb	1
Bifid thumb	2
Absent radius	1
Absent metacarpal bones	1
Dislocation of the hips	3
Absent metatarsal bones	4
Club feet	1
Deformed ears	1
Omphalocele	1
Mongolism	1

\*Taken from the work of Ladd and Gross.

According to Yeomans<sup>2</sup> anorectal anomalies can be explained in most instances on the basis of arrested or irregular development of the embryonic proctodeum and postallantoic intestine with or without persistence of a communication with the cloaca. The following embryologic causes for imperforate anus have been suggested: first, the epiblast not invaginating at the anal site and the anal canal absent; second, a rudimentary or developed anus partly or completely occluded by a persistent anal membrane; third, the postallantoic undeveloped intestine does not descend and ends blindly without function; fourth, the postallantoic intestine descends but grows backward out of alignment with the proctodeum; the intervening tissues are not absorbed and there is no function; fifth, the urorectal partition of the cloaca is arrested and the rectum communicates with the bladder, urethra, uterus, vagina and perineum, and the anus is usually completely closed; function is restricted; sixth, a urogenital outlet in the rectum; the ureters open into the rectal cavity; the anus and rectum are normal; and seventh, a persistence of the neuro-enteric canal with the opening of a postanal intestine into the sacral region.

According to Rankin, Barger and Buie<sup>3</sup> imperforate anus with internal communications is in a group of anomalies which constitute about 40 per cent of anorectal malformations. It results from failure of the embryonic ureterorectal portion of the cloaca to form completely. The anus may be present rudimentary or absent.

The diagnosis of imperforate anus may be obvious at birth if a careful routine examination of the infant is performed. According to Wangenstein and Rue<sup>4</sup> the x-ray on occasions has been useful in visualizing the terminal portion of the bowel, although before fifteen or twenty hours of age the absence of gas in the terminal part of the bowel could not be taken as evidence of obstruction at this point. Ladd et al., after four and eight hours, saw no gas shadows in the distal part of the colon because it had pushed only part way along the intestinal tract.

The treatment when possible is early correction of the imperforate anus before signs of intestinal obstruction occur. It should be emphasized that the sphincter muscle develops from the regional mesenchyme and is not dependent on the presence of the terminal bowel.

The other anomaly encountered was a myelocoele associated with a moderate degree of internal hydrocephalus. The myelocoele was located over the lower dorsal and entire lumbar region, the latter being the most common location for this type of lesion. According to Sutherland<sup>5</sup> spina bifida

occulta occurs most commonly in the lumbosacral region. In 70 per cent of the roentgenograms studied by Sutherland, the first and second lumbar vertebrae were the sites of spina bifida occulta; in another 25 per cent the last lumbar vertebra was involved.

In order to understand the various types of spina bifida some knowledge of the embryologic development of the spinal cord and vertebral column in the normal embryo is necessary. The epiblastic layer marking the site of the spinal cord appears as a shallow groove along the entire length of the embryo. The epithelium forming the floor of the groove is known as the medullary plate. The medullary ridges develop from a proliferation of the epithelium at the edges of the groove. The summits of these ridges join to form the neural tube. From this tube develops the spinal cord, its nerves and the skin of the back. This tube becomes detached from the epiblast from which it was originally derived. This separation is caused by the interposition of mesodermal segments which join in the mid-line between the neural tube and the epiblast. This change is completed by the third week of fetal life. The mesoblastic tissue which now surrounds the neural tube gives rise to the spinal meninges, the vertebral column and the overlying muscles and fibrous tissue. The vertebral bodies form and their arches from the first cervical to the third or fourth sacral segments are closed by the end of the eleventh week of fetal life. The arches below the level of the fourth sacral are normally rudimentary. At the time of their formation the spinal cord and the vertebral column are of equal length and each segment of the spinal cord lies opposite the corresponding vertebral body. The paired spinal nerves pursue a direct course from the spinal cord to the intervertebral foramina. From the third month of fetal life the growth of the spinal cord fails to keep pace with that of the spinal column. As a result the lower end of the spinal cord, the conus medullaris, comes to lie progressively higher and higher in the vertebral canal until in the adult it reaches to the twelfth thoracic or first lumbar vertebra. During the apparent ascent of the spinal cord its nerves have necessarily become elongated and now pursue a diagonal course to the intervertebral foramina. This elongation is most marked in the lumbosacral region and results in the cauda equina. The spinal cord retains a permanent connection with its original site by means of the filum terminale, a thin fibrous band extending from the tip of the conus medullaris to the posterior surface of the coccyx.

Various explanations have been given for the occurrence of spinal anomalies. Fuchs<sup>6</sup> feels that

the defect lies in the development of the neural tube. Importance of the mesodermal structures has been emphasized by Ditttrich<sup>7</sup> who pointed out that bony tissue is phylogenetically the youngest and therefore presumably the least stable tissue present. Von Reuss<sup>8</sup> feels that spina bifida occurs because the embryonic medullary tube fails to unite at one place. Spina bifida may be classified as follows:

- I. Spina bifida (posterior)
  - A. Rachischisis
  - B. Cystica
    - 1. Meningocele
    - 2. Myelomeningocele
    - 3. Myelocele
- II. Spina bifida (anterior)
- III. Spina bifida occulta

Spina bifida rachischisis includes a group of extreme abnormalities of spina bifida. There is an open groove on the back of the infant in which nervous tissue is exposed, and there is little or no formation of a sac. Spina bifida cystica may be subdivided into the following: meningocele, a condition in which there is a herniation of the meninges through the incomplete closure of the vertebral arches, its content is spinal fluid; myelomeningocele includes the abnormalities in which a portion of the spinal cord or nerve roots are attached to the cyst wall; myelocele is a protrusion of the spinal cord. Spina bifida anterior is rare. This type of deformity is represented by a defect in the vertebral bodies and cord structure. The cyst may extend into the pelvis and resemble a visceral tumor. Spina bifida occulta is a condition in which there is a defect in the vertebral arches without protrusion of the spinal cord or its membranes.

The diagnosis of spina bifida may be revealed by local or neurologic signs. The local signs in the cystic type are usually the protruding cysts with or without the nervous tissue attached to the cysts. This may at times be seen through the thin parchment-like epithelium by the use of transillumination. In the occulta variety there may be alteration of the skin such as cicatricial changes, indentations, pigmentations, teleangiectasis and hypertrichosis, or by the presence of lipomas, angiomas and dermoid cysts inside or outside of the vertebral canal. The x-ray is always helpful in locating the exact opening in the vertebral arches.

The neurologic signs depend on the location of the anomaly in the cord. They may include motor, sensory and trophic disturbances. These signs may appear at birth, shortly after, or later in life. When a meningocele is present there may be no



neurologic signs. The myelomeningocele may interfere with the upward migration of the cord because of involvement of the nerve roots in the sac during the disproportionate increase in the growth of the vertebral canal. There may be complete paralysis of the lower extremities with contractures and atrophy. The bladder and rectum may be paralyzed. The sensory disturbances are difficult to elicit in the newborn infant, but may be seen in older individuals. Trophic ulcer may develop on the feet, or over the tumor, and there may be muscular atrophy. In the occulta group there may be no neurologic disturbances until puberty when one may see paralysis of the lower extremities.

The anterior type of spina bifida presents an entirely different set of symptoms. The cyst usually protrudes into the pelvic cavity and may be taken for a visceral tumor. The symptoms may be pain in the abdomen, headache or backache. There may be bowel difficulty due to pressure from the cyst.

The treatment of spina bifida depends upon the degree of involvement of the cord and its structures. The meningocele variety offers the most favorable conditions for operation because no cord structures are involved. The myelomeningocele usually presents a thin ulcerating area over the sac which is a contraindication to operation because of impending infection. Paralysis of the sphincters, bilateral paralysis of the extremities and hydrocephalus are further contraindications to repair. Repeated aspirations of the sac through the normal skin may relieve the tension while one is waiting for epithelization to take place. When ulceration of the sac is present two per cent aqueous solution of gentian violet may be used as an antiseptic. In addition the sac may be prevented from trauma by the use of a large well-padded "doughnut."

Since ventricular hydrocephalus often results from structural anomalies as myelocele, Arnold<sup>9</sup> in 1894 described a malformation of the hind-brain associated with spina bifida. The characteristic features may be quoted from the work of Russell and Donald<sup>10</sup> as follows: "In practically all there is a flattened elongation of the cerebellum of variable length extending downward below the level of the foramen magnum. The cerebellum is smaller than normal and lacks in part the characteristic contour. There is an elongation of the medulla. The fourth ventricle is lengthened and lies to a great extent in the vertebral canal. The cervical nerves are reversed in their obliquity be-

coming decreasingly so with the lower segments. Varying degrees of arachnoiditis are found. The leptomeninges surrounding the malformation are often thickened and bound to the surrounding dura by adhesions. The fourth ventricle extends downward below the level of the foramen magnum and its foramina open into the vertebral canal rather than intracranially." These authors believe that the fluid passes through the foramina of Luschka and Magendie into the subarachnoid spaces into the spinal canal, but it is prevented from circulating above by the plugging of the canal by the medulla and elongated cerebellum. This results in a damming back of fluid and hydrocephalus.

#### REPORT OF A CASE

An infant, four hours of age, had been born with multiple congenital anomalies. The prenatal course of the mother had been normal. There had been three brothers, all normal deliveries without anatomic defect. Neither parent had any knowledge of any type of congenital deformities on either side of the family.

Physical examination revealed a relatively newborn infant whose head measured 40 centimeters in the fronto-occipital circumference. The birth weight was seven and one-half pounds (3.40 kilograms). The color of the skin was cyanotic, grade 3 on the basis of four grades. The breathing was very irregular immediately after birth. Both the color of the skin and the respirations became normal within two hours after delivery. There was a complete absence of the posterior segments of the ninth through the twelfth dorsal vertebrae. At birth this area denuded of epithelial tissue was flat, but several hours later it became cystic and elevated (Fig. 1). No nerves could be seen in the wall of the sac. The scrotum revealed no testicles. There was a complete absence of the



Fig. 1. Photograph of infant showing the location of the myelocele and recent proctoplasty.

anus, although stimulation along the approximate region of the anus caused a contraction of the tissue. There was an opening 0.2 of a centimeter in diameter at the mid-anterior part of the scro-

tum. No muconium was visible. There was bilateral paralysis of both lower extremities.

Because of the imperforate anus it was deemed advisable to explore the anal region in hopes of performing a proctoplasty. An incision was made between the tip of the coccyx and the base of the scrotum. The sphincter ani muscles were conspicuous by their contraction when stimulated by the scalpel. The dissection was carried down from the region of the coccyx to avoid injury to the bladder. About 1.5 centimeters cephalad a bluish-colored distended sac was encountered without difficulty (Fig. 2). The sac or terminal colon was brought down and sutured to the area of



Fig. 2. Schematic diagram of the pelvis to show the relations of the imperforate anus and fistula between the terminal bowel and the scrotum.

skin that seemed to include the sphincter ani muscles. The colon was then opened and muconium observed. Within the next two hours a copious muconium stool was passed. Irrigation through the new opening caused fluid to run out through the opening in the mid-scrotum. During the next five days the opening in the scrotum closed spontaneously. There were four to five normal yellow-colored stools a day. There was a gradual gain in weight, and the formula was well retained. On January 20, 1940, the right testicle was observed in the right inguinal canal. On February 6, 1940, the left testicle was seen in the scrotum, and on February 17, 1940, the right testicle was observed in its normal location.

The sac over the lower part of the back varied in degrees of intensity. At times there was considerable bulging and the surface of the sac was very tense. Since the membrane covering the sac never became completely epithelized a two per cent aqueous solution of gentian violet was painted on the denuded surface each day. There was complete paralysis of the lower extremities and consequently the lower limbs did not develop in proportion to the rest of the body. On February 24

there was a slow leak in the sac which oozed a clear fluid. Along with the loss of this fluid there was a depression of the anterior fontanel and the sac. The infant became cyanotic and stuporous, and subsequently died on February 26, 1940, from an apparent intracranial cause.

A postmortem examination was granted only for the region of the myelocoele. A linear incision was made along the mid-anterior wall of the sac. This revealed a multiloculated cystic structure which contained a mucoid gelatinous substance. There was an absence of the posterior portions of the vertebrae from the level of the ninth dorsal vertebra to the sacrum. Paired spinal nerves traversed the lateral walls of the sac at right angles to the vertebral column. These nerves which measured about one millimeter in diameter at the cord immediately faded within the substance of the sac. There was a flat ribbon of spinal cord two millimeters wide and one millimeter thick which ended in the substance of the sac about the junction of the middle and lower third.

#### DISCUSSION

Many congenital deformities are amenable to surgical treatment. Imperforate anus may be relieved by a careful dissection of the tissues between the coccyx and the base of the scrotum. The sphincter ani muscles should be spared and utilized in the repair.

At the present time the surgical treatment of myelocoele with bilateral paralysis of the lower extremities is usually unsuccessful. From the reports in the literature we find the surgical repair of the myelocoele with pronounced neurologic changes does not offer any relief of the spinal cord condition and may seriously interfere with the physiology of the brain and spinal fluid.

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## CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

### THE USE OF STORED BLOOD IN CIVIL MEDICINE

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The first experiments on preserved blood were published by Rous and Turner<sup>1</sup> in 1916. They demonstrated that citrated blood mixed with large quantities of dextrose could be refrigerated for several weeks with little resulting hemolysis. In 1917 Robertson,<sup>2</sup> working with the British Army Medical Corps, gave the first transfusions of stored blood to man. In 1937, twenty years later, the first practical application of stored blood was made in the United States when the Blood Bank was organized at Cook County Hospital, Chicago.<sup>3</sup>

After a year of experimental work, the Blood Transfusion Laboratory assumed charge of all blood transfusions in the University Hospitals in February, 1939. During the twenty-one months since that date, approximately 4,000 blood transfusions have been given to hospital patients. Close correlation of studies in the laboratory and in the clinic by a number of members of the medical faculty has proved helpful in advancing our knowledge of the use of stored blood.

#### A DEXTROSE PRESERVATIVE MIXTURE

The dextrose-citrate mixture described by Rous and Turner had not been widely adopted because the high concentration of citrate required discarding of the plasma and resuspension of the erythrocytes in saline before transfusion. As a consequence, the early workers in blood banks used citrated blood although it hemolyzed quickly during storage and was unfit for use after seven to ten days. It was felt that the successful operation of a blood bank on the scale desired for this institution required a method by which blood could be kept for a longer period. The Rous-Turner mixture was modified in our laboratory<sup>4 and 5</sup> so that the plasma could be transfused with the erythrocytes. The mixture finally devised consisted of ten volumes of blood, thirteen volumes of isotonic dextrose solution, and two volumes of isotonic sodium citrate solution. This made a total volume of 1,250 cubic centimeters to transfuse 500 cubic centimeters of blood. Quantitative studies demonstrated that the blood stored in the dextrose-citrate

mixture hemolyzed only one-twenty-fifth to one-fiftieth as fast as blood in citrate solution alone. Less hemolysis occurred in blood stored for one month when sugar was added than in blood stored ten days without it. The dextrose-citrate mixture was then adopted for routine use in the blood bank and an arbitrary storage limit of thirty days established. This practice has proved entirely satisfactory. These observations have subsequently been confirmed elsewhere.<sup>6 and 7</sup>

#### ELECTROLYTE CHANGES DURING STORAGE

Studies here<sup>8</sup> and elsewhere<sup>9</sup> had shown that considerable potassium diffuses from the erythrocytes into the plasma during storage. Because of the well-known toxicity of the potassium ion, Scudder<sup>9</sup> questioned the safety of transfusions of stored blood. Utilizing blood mixtures with high plasma potassium values, Hardin, Harris and DeGowin<sup>10</sup> were unable to observe any toxic effects either clinically, electrocardiographically or by determining the serum potassium of the recipients during transfusion.

#### TRANSFUSION OF COLD BLOOD

It had been common practice to accomplish transfusions by warming blood to body temperature before and during injection. This had the disadvantage of being time-consuming in an emergency and actually dangerous under certain conditions. Hardin, Swanson and DeGowin<sup>11</sup> transfused patients with blood taken directly from the refrigerator and were able to show that such a procedure caused no clinical symptoms in the recipients, nor was the body temperature depressed. The routine use of cold blood has considerably simplified the transfusion technic.

#### PROTHROMBIN OF STORED BLOOD

Rhoads and Panzer<sup>12</sup> had reported rapid disappearance of prothrombin during storage and concluded that the use of blood over a week old would be ineffectual in the treatment of prothrombin deficiency. Warner, Seegers and DeGowin<sup>13</sup> published data to show that the prothrombin titer decreases at a relatively slow rate during storage, remaining at about 70 per cent of normal after twenty-one days in the refrigerator. These observations coincide with the reports of Lord and Pastore,<sup>14</sup> and Ziegler, Osterberg and Hovig.<sup>15</sup>

#### REACTIONS FROM INTRAVENOUS FLUIDS

The clinician is justifiably apprehensive regarding transfusion reactions. Before the blood bank was instituted it was recognized that all reactions resulting from unclean apparatus or fluids used in transfusions would be ascribed to the blood itself. Before the use of preserved blood could be insti-

tuted it was necessary to eliminate extraneous sources of reaction. The discovery of pyrogens by Seibert in 1923 increased greatly our understanding of febrile reactions from the intravenous administration of fluids, and it can be said that her work alone made possible the commercial manufacture of safe fluids for parenteral use. Pyrogens are filterable, heat-stable substances formed by the growth of some bacteria even in distilled water. The procedures for the preparation of fluids and apparatus depend on the distillation of pyrogen-free water with which intravenous fluids can be made and the dispensing equipment washed. Both fluids and apparatus must then be sterilized before time has elapsed in which the bacteria can grow. If the pyrogens have been allowed to form they will not be inactivated by autoclaving.

The first step in the establishment of the blood bank, then, was the organization of a laboratory for the manufacture of all intravenous fluids and the cleansing and sterilization of all apparatus used in their administration. Commercial firms test all lots of fluids for pyrogens by animal inoculation. It was decided in this hospital to require a report of each intravenous injection. Using those data it has been possible to keep reactions at a minimum. An average of 1,000 to 1,500 intravenous injections of fluid are given per month. For the last year or more the incidence of chills and fever from these has been one or two in 1,000 injections. Since all transfusion equipment and the associated fluids come from the same source, prepared in the same manner, this figure also serves as a control on the number of pyrogenic reactions to be expected from blood transfusions.

#### TRANSFUSION REACTIONS FROM STORED BLOOD

To minimize errors in cross-matching and blood grouping, these procedures were allocated entirely to the technicians in the Blood Transfusion Laboratory. The interne assigned to that service has collected all blood from donors and has made rounds on every patient receiving transfusions, examining the urine for hemoglobin and ascertaining any type of reaction which occurred. Accurate records have been kept of all transfusions both on the patient's hospital chart and in the books of the laboratory. The data on transfusion reactions up to May 1, 1940, were recently published.<sup>16 and 17</sup> The series of transfusions comprised 295 with fresh blood and 2,128 with blood stored from one to thirty-eight days. The incidence of reactions of all types was the same with both fresh and stored blood. Using citrated blood up to ten days old, and blood in the dextrose-citrate mixture up to thirty days of storage, no variation in incidence of reactions could be found to correlate with the

age of storage. In other words, the transfusion of stored blood was as safe as the administration of fresh citrated blood. In the total of 2,423 transfusions the following reactions occurred:

Chills only .....	0.9 per cent
Chills and fever.....	2.0 per cent
Urticaria .....	1.1 per cent
Total reactions of all types....	4.8 per cent

There were five cases of hemoglobinuria and seven reactions of miscellaneous types. There were two fatalities, one from the administration of incompatible blood and one from overloading the circulation. This made a mortality rate of 0.08 per cent.

Since all functions pertaining to transfusions were centralized in the Blood Transfusion Laboratory it became evident that the only method by which the interne staff of the hospital could become acquainted with the technic of handling blood was for each man to spend a limited time on that service. By action of the Hospital Committee this service was made a part of the rotational internship and since July 1, 1940, each man has participated in the routine for a period of eighteen days.

#### SURVIVAL OF TRANSFUSED ERYTHROCYTES

Many methods have been used in attempts to determine how long transfused erythrocytes survive in the circulation of the recipient. While there are wide variations in the conclusions made from the results of these studies, a majority of observers agree on a survival time of about three weeks for fresh blood. Hardin and the author were able to treat a patient with aplastic anemia with blood transfusions for about two years. It was found that if he received one liter of stored blood every three weeks his red cell count returned to the same level at the end of each period. If the interval between transfusions was extended to four weeks the red cell count at the end of the period was correspondingly lower. It seemed from this that a considerable number of transfused cells survived in his circulation for at least twenty-one days. Recently three groups of English workers<sup>18, 19 and 20</sup> have studied the subject by transfusing stored blood of Group O into recipients of Group A or B. The recipients' blood was then tested at various periods for the percentage of inagglutinable cells in the circulation. It was found that stored cells persisted in the circulation in considerable numbers for two to three weeks. In a series of patients, each of whom received two simultaneous transfusions of blood, one fresh and one stored for fourteen days, there seemed to be little difference in the survival time. It was also shown that cells stored in dextrose survived in



the circulation longer than those stored without the sugar.

#### PLASMA TRANSFUSIONS

The use of plasma instead of whole blood became popular in this country through the operation of blood banks. Many institutions using preservative mixtures which kept blood only a short time were faced with the possibility of salvaging at least a part of it by separating the plasma and discarding the erythrocytes. It was soon demonstrated that plasma could be kept at room temperature for months. Its efficacy was demonstrated in the treatment of traumatic shock and burns. A controversy has arisen in this country and in Great Britain as to the best form in which the plasma proteins may be administered in the first aid treatment of shock. The various preparations advocated are: serum, dilute refrigerated plasma, dilute unrefrigerated plasma, plasma concentrated by lyophile apparatus, plasma or serum concentrated in cellophane bags, and plasma dried in lyophile apparatus and given in concentrated form. All of these seem to have proved to be successful therapy. The controversy rages mainly around the most desirable method of preparation and storage. In this hospital Dr. Besser of the Department of Surgery has been studying the patients developing shock. He has found that the transfusion of whole blood or dilute dextrose-citrate plasma is efficacious. The clinical study of shock in this country has been considerably handicapped by the paucity of cases available in the average well-conducted hospital.

#### LIMIT OF STORAGE OF WHOLE BLOOD

All workers in the field have accepted the amount of hemolysis during storage as the major criterion for discarding whole blood as unfit for transfusion. Arbitrary limits of storage have been used with various preservative mixtures by different workers. Citrated blood has generally been discarded after seven to fourteen days of storage. With the use of the dextrose-citrate mixture a limit of thirty days has been satisfactory. No systematic attempt has been made to explore the extreme limits at which blood can be used. We have successfully given one transfusion with blood stored for forty-five days. The absence of more exact criteria for limits of storage is due to lack of knowledge of the toxicity of hemoglobin. It is known that there is a renal threshold for free hemoglobin and that anuria and death sometimes occur as a result of hemoglobinuria. Osterhagen, Andersch, Warner, Randall and DeGowin<sup>21 and 22</sup> have published evidence to show that renal insufficiency as a complication of

hemoglobinuria can be prevented in dogs by keeping the urine alkaline. Unfortunately, the renal threshold for hemoglobin in human beings varies with the individual so that at present the definite amount of free hemoglobin which the recipient can safely tolerate cannot be stated, but it is well over one gram. Until the present, the amount of free hemoglobin has been the only criterion for discarding blood.

During the summer of 1940 we experimented with modifications of the dextrose-citrate preservative and attempted the use of a mixture containing a hypertonic solution of dextrose. This was found to possess certain minor advantages over the isotonic dextrose solution heretofore described. The rate of hemolysis during storage was slow and the blood mixture appeared satisfactory to the unaided eye and under the microscope. Transfusions of bloods stored a relatively short time were satisfactory. When older bloods were utilized, however, many of the recipients developed hemolytic reactions. Investigation of these reactions revealed that the contents of the erythrocytes stored in the hypertonic mixture had become so hypertonic that they hemolyzed in physiologic sodium chloride solution or in the plasma of the recipients.

A detailed study of the changes in osmotic pressure of the erythrocytes has been carried on in the laboratory and will soon be published. Under practically all conditions studied it was found that the osmotic pressure of the cells increased during storage and might attain such a point that the erythrocytes would rupture when brought in contact with normal serum or plasma. A simple laboratory test was devised to preclude from use stored bloods which had progressed to this stage. This experience, then, has led to the establishment of a second important criterion to limit the storage of blood.

*Acknowledgments.* The project which has been outlined has involved the work and cooperation of many people. The entire hospital staff has been concerned either directly or indirectly in securing donors and in complying with the details of organization which have been considered necessary. The Blood Transfusion Committee, consisting of Drs. Plass, Alcock, H. P. Smith, Jeans, DeGowin and Gibson, and Mr. Neff have formed policies and been most encouraging. Drs. Donald Thatcher, Swanson and Hardin performed most of the laborious transfusion work during the time when the Blood Transfusion Laboratory was being organized. The nurse-technicians in the laboratory have worked loyally and hard. Most of

the chemical determinations were performed by Drs. Harris and Bell, and Mrs. Kenneth Swan. The Department of Obstetrics and Gynecology furnished funds and laboratory facilities to carry on the investigations. Members of the Departments of Pathology, Physiology, Zoology, Biochemistry and Physical Chemistry have generously given advice and assistance.

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## MILITARY USES OF STORED BLOOD

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Experimental and clinical experience with stored blood has been secured largely from civilian medicine, but it is of both historical and practical interest that stored blood was first used in military medicine. Robertson, an American medical officer, employed preserved erythrocytes in 1917 in the treatment of wounded soldiers in a casualty clearing station of the Third Army of the British Expeditionary Force. In his paper published in 1918,<sup>1</sup> describing his experience, is found the following statement which clearly sets forth the advantages of preserved blood under such circumstances: "There is a definite need in front area medical work of a method for giving transfusions rapidly. At casualty clearing stations during the busy time of an attack, it is obviously impossible to perform transfusions by the usual methods in nearly all the cases in which transfusion is indicated. The difficulty of procuring sufficient blood under rush conditions, the time consumed in carrying out the transfusion, and the need of every available medical officer in the operating theatre, all tend to reduce the number of transfusions which can be given. The use of preserved human cells for transfusion suggested itself as a possible solution of certain of these difficulties." This statement becomes emphasized because of the current war in Europe and the defense preparations of this country. Medical preparedness as a part of national defense must include the establishment of a workable army transfusion service.

Military blood banks have been an integral part of many armies in recent conflicts. The Russians, the Germans, the British and the French all have army transfusion units as did the Loyalist Army in the late Spanish Civil War. Unfortunately, due to the poor communications resulting from blockade, little can be learned of the exact technic employed in these various organizations with the exception of those utilized in England and in her expeditionary forces.

Workers in the latter country have collected and published many data on the subjects of apparatus and technic employed in the treatment of wartime casualties with both blood and blood substitutes. They have been forced to organize not only purely military, but also civilian transfusion services because of the intensive aerial bombardment of large population centers. One cannot help but admire the workers in England who have forged ahead not only organizing a workable scheme for blood

**American Medical  
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June 2-6, 1941**



transfusion in a difficult situation but who have found time and facilities to carry on sound research programs.

The first question to be answered is whether transfusion of any substance may be profitably employed under battle conditions. That whole blood can be transported considerable distances, even thousands of miles, without destruction of the erythrocytes, is now well established, first by Robertson<sup>1</sup> in 1917, by the Spanish and the armies in the present war, and later in our own laboratory<sup>2</sup>. The problem remaining is to discover if blood so transported can be used under the adverse circumstances of military action.

In the recent battle of Flanders, from May 10 to the evacuation at Dunkirk, 350 to 400 pints of stored blood and plasma were utilized by the British Medical Service. Maycock<sup>3</sup> reported that all types of wounded cases were treated and that all transfusion officers were satisfied with the results. They noted, however, that plasma was of less value than whole blood when hemorrhage was severe. In most cases 1,000 to 1,500 cubic centimeters and sometimes more of blood or plasma were necessary. Difficulty in keeping transportation organized was encountered because of the retrograde movement in that battle, but where blood or plasma was available transfusion was accomplished under all conditions—"in beds, on stretchers, in clean rooms and in hovels". Their conclusion was that supplies of blood and plasma must be made available farther forward than the casualty clearing stations since the primary factor in the treatment of shock is time.

From their experiences it becomes evident that transfusion in military medicine has two indications: first, to combat hemorrhage; and second, to alleviate shock. In this country and abroad the interest of workers in the field of transfusion has lately become centered on the use of blood substitutes (largely modifications of the liquid phase of blood) unchanged, "wet" serum and plasma or desiccated serum and plasma. The value of these substances must be judged by efficacy in the treatment of hemorrhage and shock.

With this in mind it behooves us to examine the British work in the use of blood substitutes. On a theoretic basis the augmentation of blood volume by the use of any of these products would seem adequate, but as in many other clinical problems unforeseen complications are arising. Some of these indicate that we must revise our ideas concerning blood substitutes.

As early as the battle of Flanders it was noted that there is no completely satisfactory substitute for whole blood in the treatment of shock accompanied by massive hemorrhage<sup>3</sup>. This has

not been as yet wholly confirmed, but Black in a later article<sup>4</sup> stated that hemorrhagic shock does not respond satisfactorily to plasma infusion. He intimated he had experimental evidence to show that blood produced better results, and promised later publication of that evidence. Furthermore, he stated that in burn shock, where there is loss of serum protein into the tissues as well as hemoconcentration, unmodified plasma is of more value than concentrated plasma. Although this represents a somewhat new concept, it seems logical that, in an individual who already has a concentrated plasma which is incapable of retaining water, the primary cause is not in the osmotic pressure of the plasma. Under these conditions the addition of a relatively small amount of exogenous concentrated plasma could not be expected to correct the disorder. It would seem more logical to use larger amounts of unmodified plasma in order to increase the blood volume as much as possible. Other features of dried plasma which make it undesirable are that considerable time and machinery are necessary in its preparation. Furthermore, this machinery is not in existence and to manufacture desiccated plasma on a large scale would necessitate an enormous initial expenditure of money. Dried plasma is somewhat difficult to put into solution and since time is a factor in the treatment of shock and may not always be available under battle conditions, the use of dried plasma seems to be contraindicated. All these features appear to us to constitute valid arguments against its use in military medicine.

There exists much disagreement among workers concerning the relative merits of plasma and serum. The latter is said by some to cause more reactions and plasma is said by others to deteriorate on storage. At several institutions in this country unmodified plasma has been used in large quantities without untoward results. Our own experience has been similar. Perhaps the answer lies in the work of Buttle and Kekwick<sup>5</sup>, officers in the British Medical Service who have used both in the treatment of experimental shock in cats and who believe that plasma produces better results.

It can be stated briefly, then, that blood and blood substitutes made available through a military blood bank have a demonstrated value in the treatment of wounded soldiers and civilians. Blood substitutes have been found wanting, particularly in the treatment of shock due to hemorrhage. In addition dried plasma has proved of less value than unprocessed or "wet" plasma.

With these facts in mind, the establishment of a blood transfusion service in an army becomes somewhat more simple. It is entirely clear that

any program which does not include blood is deficient. It seems desirable from a purely common sense viewpoint to create a system which is simple and easily workable in all its details so that varied and perhaps untrained personnel can have a part in its execution. The use of whole blood alone will not be adequate since blood can be made available no closer to the front than the last point where refrigeration is possible. Beyond this point some blood substitutes must be used. The simplest substitute to prepare is unmodified plasma and since, from available data it seems that this is also the best clinically, the choice is quite clear.

The ascertainment of which preparations are most advisable does not, however, solve the whole problem. Yet to be determined are the type of bottle, the container for transportation and the method of refrigeration. Still proceeding on a common sense basis, it is advisable to use equipment which is already in commercial production. The reasons are two; first, such material is immediately available; and second, it is cheap. This latter factor is important because of the obvious advantage of using equipment that is expendable—that which can be used once and discarded. Several commercially made bottles are adaptable to blood storage and transportation and there is absolutely no necessity of designing new, untried apparatus. For packing and refrigerating blood some standard, readily available, shipping container should be adapted—if possible, one which is already used in the army. Some such utilization of inexpensive and easily procurable material represents the ideal system rather than the designing of special bottles and refrigerators or the use of blood substitutes requiring expensive and non-existent machinery for their processing.

Distribution and supply of blood and plasma to army units must necessarily be worked out by the Army itself, preferably through regular transportation channels; but again it must be pointed out that this problem will be infinitely simpler if complicated, unfamiliar and unavailable equipment is avoided.

From the experiences in civilian practice, in the laboratories and in the armies of Europe we can draw a few conclusions which should guide the development of a military transfusion service:

1. No program is adequate unless whole blood is included.
2. Some blood substitute is necessary but care must be exercised in its choice.
3. The dictates of common sense imply that the equipment used should be simple and commercially procurable.

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## THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

### CHORIOMA OF THE TESTICLE

F. P. McNAMARA, M.D., and  
H. B. HIBBE, M.D., Dubuque

Tumors of the testis are comparatively rare. According to Hinman<sup>1</sup> out of 85,000 male admissions to hospitals in San Francisco, there were fifty-two men with proved tumor of the testis, an incidence of one to sixteen hundred. He gives the relative frequency of testicular tumors in malignant tumors of all kinds as about 0.57 per cent. The case to be cited is of interest because the tumor, a chorioma of the left testis, seems identical with the same type of tumor arising in the uterus.

## CASE REPORT

*Chief Complaint:* The patient, a white male, fifty-nine years of age, was admitted to the Finley Hospital December 8, 1926, with complaints of "enlargement of the left testicle and the spitting up of blood."

*Family History:* Irrelevant.

*Past History:* Aside from the infections of childhood he enjoyed good health until about five months before admission when his present illness began.

*Present Illness:* About five months before admission the patient noticed a gradual but painless enlargement of the left testis. Except for a feeling of weight it did not bother him and he paid little attention to it. About a month before being seen the mass grew rather rapidly, but had not changed much since then. About two weeks later he began to cough up blood, and he stated that he was losing strength. Because of the history, tuberculosis was suspected and an x-ray examination showed large and small metastases throughout each lung. These were thought to be sarcomatous and the patient was advised to enter the hospital.

*Course in the Hospital:* The patient continued to cough up large quantities of hemorrhagic sputum and at times pure blood. The blood examination showed white blood count, 12,400; red blood count, 3,412,000; and hemoglobin 56 per cent (Sahli). No unusual cells were seen in smears.



In spite of treatment which consisted largely of rest, the patient failed rapidly and died forty-eight hours after admission.

*Final Clinical Diagnosis:* Sarcoma of the left testis with pulmonary metastases; question of syphilis.



Fig. 1. Museum specimen showing replacement of the testicular tissue by the chorioma.

*Necropsy Abstract:* Externally the body showed evidence of a moderate loss in weight and a large mass involving the left inguinal region and the scrotum, and resembling a hernia. On dissection the upper portion of the mass contained bloody fluid, while a greatly enlarged testis composed of dark red, necrotic-appearing tissue enclosed within the tunica albuginea made up the lower half. In its longest diameter the mass measured 18.5 centimeters while the testis was 6.5 centimeters in diameter. Just above the upper pole of the testis a few dark red nodules extended upward on the inner side of the cavity (Fig. 1). The inguinal lymph nodes were not involved and the opposite testis showed only slight scarring. Metastases were found in the spleen, each lung and in the hilic lymph nodes. In the lungs they varied considerably in size and appeared as localized areas of hemorrhage and necrosis (Fig. 2). The ascending aorta showed the linear striations suggestive of specific aortitis.

It was difficult to obtain satisfactory sections from either the primary tumor or the metastases because of hemorrhage and necrosis. Frequently at the periphery of a hemorrhagic zone, large syncytial masses of epithelium, exactly like those in similar tumors arising in the uterus, were seen in

sections from the lung and spleen. Only rarely could these cells be made out in sections from the testis because of necrosis and hemorrhages.\* The right testis and aorta showed the changes characteristic of syphilis, fibrosis and round cell infiltration of the testis and miliary gummas and scarring of the media of the aorta.

*Anatomic Diagnosis:* 1. Chorioma of the left testis with necrosis and hemorrhages; hydrocele; metastases to the spleen, each lung and to the hilic lymph nodes; multiple pulmonary hemorrhages. 2. Syphilitic meso-aortitis and right orchitis; arteriosclerosis.

#### GENERAL DISCUSSION

Ewing<sup>2</sup> recognizes three main types of teratoma testis: first, adult embryomas or teratomas; second, embryoid, teratoid or mixed tumors; and third, embryonal malignant tumors.

The adult teratomas are rare and composed of definite rudimentary organs which may be so arranged as to resemble a parasitic fetus. These

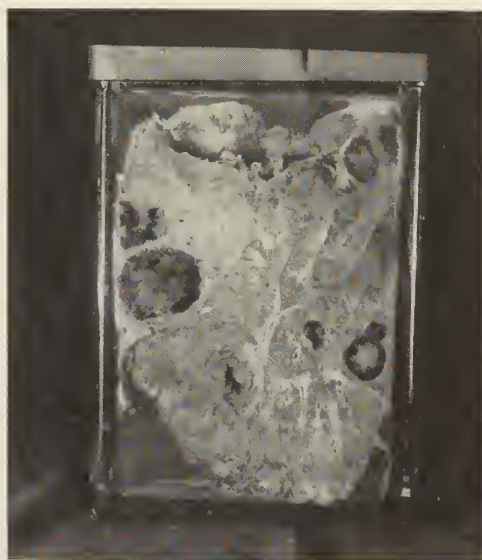


Fig. 2. Museum specimen showing metastases in the right lung.

are identical with dermoids found elsewhere in the body and especially in the ovary. They have only a very slight tendency to become malignant and in the great majority of instances are benign.

The teratoid tumors of the testis are composed of more or less embryonal structures derived from all three germ layers but arranged in such confusion as to eliminate any resemblance to an embryo. These tissues are comparatively adult in type and the tumors appear quite benign, but there is a marked tendency for the overgrowth of the derivatives of one germ layer and thus these tu-

\*The specimen was referred to Dr. C. F. Geschickter of Johns Hopkins Hospital who confirmed the diagnosis.

mors tend to take on true neoplastic and malignant properties.

The most frequent tumor of the testis is the malignant embryonal tumor which is of teratogenous origin. Usually one type of cell overgrows the others and thus the tumors may appear as carcinomas or sarcomas. Aside from the seminoma which some authorities believe arises from the adult spermatogonia, the malignant embryonal tumors are the most common ones encountered in the testis. The chorioma is an example in which the epiblastic elements have assumed malignant characteristics.

Metastases from the teratoma testis are most commonly noted in the retroperitoneal lymph nodes and later they extend upward to the mediastinal or even the cervical nodes. At times metastases also result from invasion of the spermatic and iliac veins either as a continuous tumor growth which may reach the heart or as discontinuous metastases, giving rise to secondary growths in the lungs, liver, brains or kidney. Because the primary growth may be small and relatively symptomless the metastatic tumors may be the first to give rise to notable symptoms.

In the diagnosis of testicular tumors the general rule is to consider all of them malignant until they are proved otherwise. In our experience<sup>3</sup> the difficulty has been to differentiate neoplastic from inflammatory processes. Most tumors were considered to be due either to syphilis or tuberculosis. This is because many surgeons do not comprehend the fundamental pathology of each condition and therefore are unable to differentiate them by physical examination which necessarily is based upon such a comprehension. While admitting that in rare instances it is impossible to make such a differentiation, with adequate study it can be done in the majority of cases.

A modern aid to diagnosis consists of the study of the hormones in the urine. Usually the Zondek test is positive in cases with tumor and negative in other conditions. Following orchidectomy, the test becomes negative after two weeks unless metastases are present. A test is regarded as negative if the amount of hormones present is less than 300 mouse units. In cases of doubt, an exploratory operation may be performed provided the operator is prepared to do an orchidectomy if a malignant tumor is present.

The treatment of these tumors depends somewhat upon the physical condition of the patient and whether or not metastases are demonstrable. If the process is confined to the testis and the patient is in good condition, radical orchidectomy is the operation of choice. If the patient is in

poor condition and metastases are evident, x-ray therapy is indicated. Some of these tumors are highly sensitive to irradiation but others are less so. The prognosis in all these tumors is serious but with early diagnosis and adequate treatment, cures should be expected in one-half to two-thirds of the cases. In later cases and in those with metastases in the retroperitoneal lymph nodes or in the viscera, palliative treatment is about all that can be given.

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#### U. S. P. ADVISORY BOARD ON BLOOD AND BLOOD SUBSTITUTES

Whole blood, normal human plasma and normal human serum are among the new items proposed by the Subcommittee on Scope for admission to the new edition of the Pharmacopoeia, now in the process of preparation. A number of medical groups are already studying the standardization of these products, and it was deemed advisable to coordinate these studies through an advisory board.

The Committee of Revision and the Board of Trustees accordingly has established the U. S. P. Advisory Board on Blood and Blood Substitutes to accomplish this purpose. The Board, under the leadership of Dr. Perrin H. Long, of the Johns Hopkins University Medical School, has had its initial conference, and tentative monographs on the subject will be prepared and distributed to all who are interested.

Those who wish to offer suggestions or obtain information are invited to communicate with the Chairman of the Revision Committee, Forty-third Street and Woodland Avenue, Philadelphia, Pennsylvania.

#### SYMPOSIUM ON VIRUS DISEASE

The Iowa State Medical Society and the Iowa Academy of Science will present the second of their joint symposia when the Academy meets at Simpson College, Indianola, Friday, April 25. The subject to be discussed is "Virus Disease", and Dr. J. W. Gowen of Iowa State College, Ames, formerly with the Rockefeller Foundation, will preside.

Dr. C. S. Vinson of the University of Missouri, will speak on the Chemistry of Viruses; Dr. W. M. Hale of the State University of Iowa, College of Medicine, Iowa City, will discuss Virus Diseases of the Respiratory Tract; and Dr. C. D. Lee of the Veterinary Division of Iowa State College, Ames, will present a paper on Virus Disease in Animals.

The meeting will be held at 1:30 p. m. in the Simpson College Chapel, and members of the two cooperating societies are invited to attend.



# STATE DEPARTMENT OF HEALTH

*Walter L. Looming*

## Fremont County Physicians Conduct Third "First Aid" Course

On Monday evening, March 10, a meeting attended by about two hundred persons from different parts of Fremont County was held at the Legion Hall in Sidney. The program culminated a course in first aid and accident prevention with sessions once a week over a period of fifteen weeks.

Chairman of the meeting was Mr. Max Ellis of the American Telephone and Telegraph Company of Hamburg. Mr. P. K. Harlan, District Plant Superintendent of the American Telephone and Telegraph Company at Omaha, conferred first aid certificates on sixty-eight men who satisfactorily completed the course and examination. Standard certificates were awarded to thirty-seven persons, twenty-six received advance certificates and five were given the Instructor's Card in First Aid. A representative of the State Department of Health spoke to the group on the subject of Disease Prevention and Control.

### *Sponsors of Course*

The course in first aid and accident prevention, the third to be held in Fremont County during the past three years, was under the leadership of Ralph Lovelady, M.D., president of the Fremont County Medical Society, and Mr. Ellis. Sponsoring

agencies were the Fremont County Medical Society, the Sidney Legion Post, the Fremont County Chapter of the American Red Cross and Fred H. Hill, Editor of the *Hamburg Reporter*.

### *Faculty and Subjects*

A list of physicians and others who participated and the subjects which were presented is printed below.

Others participating in the course were Mr. Fields and Mr. Tilliander of the Omaha Fire Department with demonstration of the respirator, and Chief Knee of the Iowa State Highway Patrol who showed a moving picture film.

### *Recipients of Certificates*

Certificates were awarded to individuals representing the following organizations and occupations: State Highway Patrol (advanced five, instructor's five, Telephone Company (standard two), rural mail carrier (standard two), school bus driver (standard one), oil station employee (standard two, advanced one), county employee (standard nine, advanced five), city fireman (standard one), Light and Power Company (standard one), State Highway Department (standard six, advanced two), Works Progress

Name	Address	Subject
Mr. Max Ellis.....	Hamburg.....	First Aid, Its Needs and Uses
Ralph Lovelady, M.D.....	Sidney.....	Physiology and Anatomy
R. C. Danley, M.D.....	Hamburg.....	Shock
R. W. Sykes, M.D.....	Hamburg.....	Bandages
B. B. Miller, M.D.....	Tabor.....	Wounds Requiring Special Consideration
W. D. Marrs, M.D.....	Tabor.....	Artificial Respiration
W. E. Kerr, M.D.....	Randolph.....	The Respiratory System
A. R. Wanamaker, M.D.....	Hamburg.....	
A. E. Wanamaker, M.D.....	Hamburg.....	First Aid Kits
R. A. Powell, M.D.....	Farragut.....	Wounds and Control of Hemorrhage
Kenneth Murchison, M.D.....	Sidney.....	Unconsciousness
H. P. Cole, M.D.....	Thurman.....	Injuries Due to Heat and Cold
James Martin, M. D., Professor of Orthopedics.....	Creighton University, Omaha.....	Injuries to Bones, Joints and Muscles
Charles Newell, M.D.....	Omaha.....	Condition of Patient on Reaching Hospital

Administration, foremen, timekeepers and laborers, (standard four, advanced eleven), trucker (standard one), farmer (standard two), student (standard one) and others (standard five, advanced two).

#### *Value of Course*

A course in first aid, accident and disease prevention such as that recently conducted by physicians of Fremont County has value from several standpoints. Members of the group are made accident-conscious; they receive practical suggestions helpful in civilian life and national defense. The influence of the course, aided by the spoken and written word, affects the entire community. Worthy of note also are the cementing of the bond of understanding between the medical profession and the public, and the growth into greater appreciation of basic science and modern medicine.

#### **SPECIAL MEETING FOR BOARD OF HEALTH**

The Commissioner has called a special quarterly meeting of the State Board of Health to be held in Des Moines, Tuesday, April 1. The agenda comprise problems related to national defense.

Newly appointed members of the Department's Advisory Board of Health are Frank P. McNamara, M.D., Dubuque and Addison C. Page, M.D., Des Moines. Other members of the Board

are Edward M. Myers, M.D., of Boone, president, Walter A. Sternberg, M.D., of Mt. Pleasant, and Herbert E. Stroy, M.D., of Osceola, secretary.

#### **ANNOUNCING PUBLIC HEALTH MEETING**

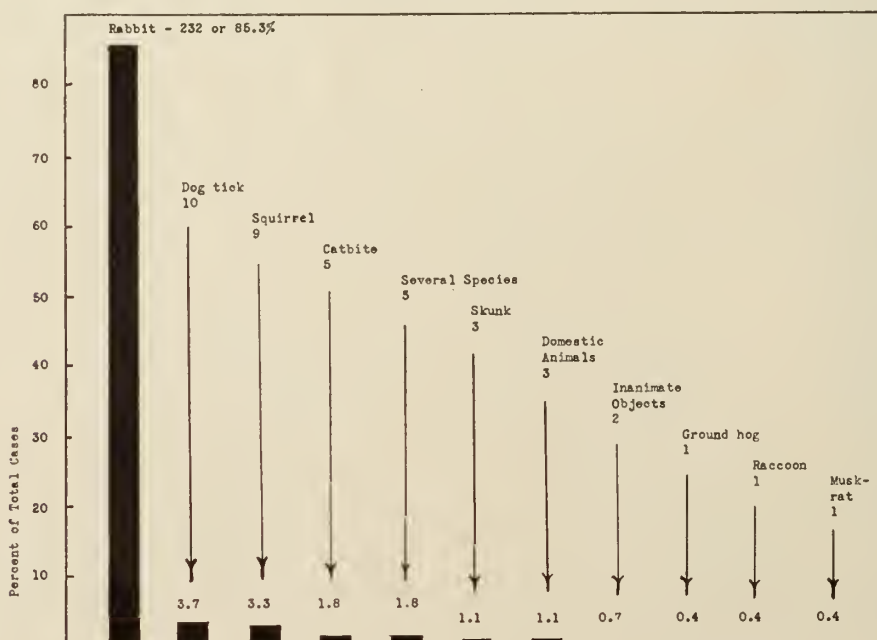
The Fifteenth Annual Meeting of the Iowa Public Health Association will be held at Hotel Fort Des Moines in Des Moines, Thursday and Friday, May 8 and 9, 1941.

The program will deal especially with National Defense, Local Health Service and Industrial Hygiene. Subjects will be of special interest to attending physicians, physicians who render service in industry and local health officers. All who can are urged to attend. President of the Association is A. H. Wieters, M. S., State Sanitary Engineer and Director of the Department's Division of Public Health Engineering.

The Program Committee has been fortunate in securing as guest speaker C. D. Selby, M.D., Medical Consultant, General Motors Corporation, Detroit, Michigan, noted authority on Industrial Hygiene and a former resident of Des Moines. Another visiting guest will be Reginald M. Atwater, M.D., of New York, Executive Secretary, American Public Health Association. The complete program of the meeting will appear in the May issue of the JOURNAL.

#### **TULAREMIA IN IOWA**

Probable sources of infection in 272 cases reported during the eight-year period, 1933-1940.





# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## ANNUAL SESSION AT DAVENPORT

Eighty-nine times the Iowa State Medical Society has met in annual session to discuss and hear discussed the latest developments in medical and surgical practice. To Davenport goes the honor of being host city for the ninetieth session on May 14, 15 and 16. It would be interesting indeed to compare the program of that first session in 1851 with the program for 1941 published in this issue of the JOURNAL. We like to believe that the men who appeared on that first program would be as proud of the growth of the idea they originated as we are today of the accomplishments of that great body of men and women who through the years have raised Iowa medicine to its present standard of excellence.

A glance at the program for the Davenport meeting convinces us that everyone concerned in the arrangements was determined to have this year's meeting just a little better than any previous session. Chronologically the opening gun of the 1941 session will be fired on the links of the Davenport Country Club at 1:00 p. m. on Tuesday, May 13. President Deering and Secretary Nicoll of the Iowa State Medical Golf Association urge every member who has ever held a golf club, or thinks he could figure out how to hold one, to be there to help make the Seventh Annual Tournament a success. As a reward for the hard afternoon's work they promise a prize and a fine dinner minus speakers. (Announcement on page 144.)

For those who think golf is a "sissies" game and a complete waste of time, we recommend attendance in the Main Ball Room of the Blackhawk Hotel at 1:30 p. m. on the same afternoon, where the Central States Society of Industrial Medicine and Surgery is initiating a "top-notch"

program. The committee states that this meeting is to replace the annual fracture clinic, and every county fracture chairman is urged to attend, as is every practitioner interested in fracture work. Therefore, whether you want to spend the afternoon knocking a little white pellet over the grass, or to take life seriously and improve your mind, you will find suitable arrangements awaiting you.

The main session opens on Wednesday morning with three nationally known guest speakers scheduled to give addresses before the combined assembly. The names of Charles Mayo, Fred Willius and General Marietta, Surgeon-General of the United States Army are too well known to need any comment. It is hard to see how the program committee could have arranged a greater opening attraction to encourage attendance. Any member who has been in doubt about going to Davenport for the meeting this year should have his decision made for him by this first morning's intellectual feast. Perusing the program further we note that on Wednesday afternoon the session is divided into the usual medical, surgical and head specialty sections.

On Thursday two outstanding innovations appear which deserve special mention. The first of these is the address at 11:00 a. m. by the president of the American Medical Association, Dr. Nathan B. Van Etten. The JOURNAL wishes to take this opportunity to extend the hearty welcome of all Iowa to Dr. Van Etten, and to pay its respects to one of medicine's great leaders who has valiantly championed the cause of American Medicine in the fight to maintain its freedom. Heretofore, the national president's address has been scheduled for the final day of the meeting, when too often only a handful of the members remained in attendance. We commend the program committee for this change.

The second innovation is one of special significance for the State Society this year. On Thursday afternoon it acts as host to the Iowa Interprofessional Association. The entire afternoon will be devoted to this joint meeting of the state associations of nurses, dentists, veterinarians, pharmacists and physicians. An outstanding program has been prepared on subjects of vital interest to all the five component societies. The selected speakers are men of national repute. All that remains is for us, the Iowa State Medical Society, to demonstrate our ability to be good hosts. The JOURNAL has no fear on this score.

A further departure in this year's program will we believe, be an improvement. The Friday session which has customarily ended at noon, and which has been the weak period of the pro-

gram because so many members were either occupied in the House of Delegates or had gone home, is to be continued throughout the day. The program which has been arranged for Friday is one of the best of the entire meeting. All of the speakers for Friday morning are out-of-state guests and men of national prominence. Certainly no one can leave before the last gavel stroke on Friday afternoon without feeling that something worthwhile has been missed. The program committee has done a splendid piece of work, and we hope every member who possibly can will be on hand to reap the benefit of the fine program which has been arranged.

However, there is more to an annual session than the program, important as that is. The scientific and commercial exhibits are always important adjuncts to the state meeting. We hope each member will again this year make it a point to visit each exhibit. Time has been thoughtfully arranged each morning for this purpose, and we can show our appreciation to all the exhibitors, scientific and commercial alike, by paying them a visit.

Finally, there are the other attractions so necessary for a successful annual session—the banquet, the smoker, the entertainments, and above all the renewal of friendships and the making of new ones, in groups of two to a dozen or more.

The stage is set. Davenport is ready. Let's go!

#### PROPHYLAXIS IN RHEUMATIC FEVER

It has been understood for many years that the average age for the onset of rheumatic fever is about seven years. It has also been recognized that the child who has the first attack of rheumatic fever at seven years of age will in all probability suffer from five recurrent attacks before he reaches maturity. With each succeeding attack of rheumatic disease there is additional cardiac damage. The mere fact that the disease recurs has been the most discouraging factor in the management of the child with rheumatic fever. The removal or the absence of the tonsils has had no influence on the recurrence of the disease.

The exact etiology of rheumatic fever has not been completely elucidated, but it has been repeatedly shown that infections with beta hemolytic streptococci precede episodes of rheumatic fever. Ten years ago Coburn demonstrated that if the factor of infection with beta hemolytic streptococci could be removed, which he did by taking a group of children with active rheumatic infection from New York to Central America, all evidence of active infection disappeared, and recrudescence did not occur. On the return of this group to New York, all the patients developed streptococ-

cic infections of the nose and throat and a recurrence of the rheumatic infection.

Concurrently in 1939 Coburn and Moore in New York, and Thomas and France in Baltimore, reported on the prophylactic use of sulfanilamide in the prevention of recrudescences of rheumatic fever. This work was based on the premise that if the beta hemolytic streptococcus factor could be removed or attenuated, perhaps recurrences could be prevented. Numerous articles in the literature have indicated that sulfanilamide administered during the course of acute rheumatic fever and chorea was without beneficial results and that toxic symptoms seemed to preclude its use. Coburn found that sulfanilamide administered to patients after the onset of streptococcic pharyngitis did not prevent rheumatic recrudescences.

However, in the New York study it was found that when sulfanilamide was administered continuously throughout the winter, 79 out of 80 children so treated escaped hemolytic streptococcic infections and active rheumatic disease. Thomas, France and Reichsman have recently reported the results of a four-year study to determine whether or not the prophylactic administration of sulfanilamide prevents recurrences of rheumatic fever. The drug was administered from November to June, usually in a dose of 1.2 grams daily. Fifty-five patients with a recent history of acute rheumatic fever received the drug during 79 person-seasons. Sixty-seven patients with a similar history were given no prophylactic treatment, and were observed as controls during 150 person-seasons. No serious toxic effects of prolonged administration of sulfanilamide were recorded. None of the treated patients had an acute infection due to the beta hemolytic streptococcus, and no major attack of acute rheumatic fever occurred. In the control group, fifteen major attacks of acute rheumatic fever were observed. Two patients in the control group developed subacute bacterial endocarditis. There were no deaths in the treated group; however, four deaths occurred in the control group.

These reports on the efficacy of sulfanilamide in preventing recrudescences in the rheumatic patient are perhaps a solution to the most discouraging factor in the management of the child who has had rheumatic fever. It should be emphasized that patients who have been given prophylactic doses of sulfanilamide, have been examined at frequent intervals, and blood counts, sedimentation rates and blood levels of the drug have been determined. Corroboration of these results will offer great hope in the prevention of cardiac crippling by rheumatic fever.



### THE 1941 SUMMER ROUND-UP

Each year for several years the JOURNAL has carried information in these columns on the Summer Round-Up of the Children. This year we again give it space because we believe it is an activity which merits the cooperation and full support of all physicians.

Since 1925 the National Congress of Parents and Teachers has been hammering away in an educational drive to teach parents of the great value to be derived from regular health examinations for their children. Important progress has been made, but it must be admitted that the movement as yet has failed to realize its full potentialities. What are the causes which are operating to retard the progress of a program which is admittedly advantageous to everyone concerned?

We can think of several. In the first place, it is difficult for many parents to appreciate the importance of taking a well child to the doctor. Another group of parents simply cannot afford the cost of medical service which is not demanded by actual illness. A still further cause is to be found in the lack of any sort of established standard as to what should be included in a reasonably thorough health appraisal of a well child of school or preschool age. Too often parents have taken their children for an examination only to have them lined up in rows and passed by the examiner at the rate of fifteen or twenty an hour. Such a procedure is not only of very little value, but is largely a waste of everybody's time. Parents cannot be blamed for being unimpressed with the benefits to be derived from such incomplete and hurried examinations.

These are some of the difficulties which must be recognized and overcome if the regular medical supervision of well children is to be developed to its fullest extent. It is decidedly in the best interests of the medical profession that these difficulties be overcome, because progress in the field of preventive medicine among children leads to improved standards of health among the children of America, and because there is every reason to believe that governmental medicine is just waiting the opportunity to take over this type of medical service on the basis that preventive medicine comes within the field of public health.

More important than anything else, we believe, if the aim of the health program of the National Congress of Parents and Teachers is to progress as it deserves, is the improvement in the quality of the health examination itself. Minimum standards need to be established. Such standards must include more than a mere physical inspection. They must embrace all the factors which have a

bearing upon the child's growth and development, mental as well as physical. Health is more than a matter of absence of physical defects. Good health means a happy mental state in which emotional maladjustments, abnormal behavior and undesirable attitudes are absent. It means a diet adequate to meet the nutritional needs of the growing child. It means preventive inoculations against disease. It means good eye-sight and good hearing. In short, it means a healthy mind in a healthy body. This sort of appraisal of a child's health status cannot be carried out when examinations are done in the group method. The examination should be individualized in the office of the family physician with one or both parents present. Under these conditions an unequalled opportunity for parent education prevails.

In the next two months the Summer Round-Up campaign will be initiated in every county in the state. County medical society officials will be visited by Parent-Teacher representatives regarding arrangements for the examinations. Through the central office in Des Moines each county medical society secretary is being sent the Summer Round-Up bulletin published by the National Congress of Parents and Teachers. In it will be found an outline of the objectives and methods of the health project of the Congress. The success of the activity of this important group of more than 2,500,000 persons depends upon the cooperation extended them by the medical profession. Can we as physicians, and as beneficiaries under the plan, do less than willingly and wholeheartedly cooperate in this worthy effort to build a sounder and healthier nation of the future? Let us perform the type of examination which will convince parents that regular medical supervision of their children's health is worthwhile.

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### THE FIGHT AGAINST CANCER

The Women's Field Army will conduct its fifth annual enlistment campaign in Iowa during the month of April, and once again we appeal to the medical profession for wholehearted cooperation in this important field of preventive medicine. The Managing Director of the American Society for the Control of Cancer has just completed a round of eight regional assemblies of the Women's Field Army in the United States, and he has expressed the satisfaction felt by the national society in the progress made in cancer control in Iowa.

The Women's Field Army is a lay organization under the direction of representatives of organized medicine. Since its inception five years ago the Iowa Division has been guided by the advice of

the Cancer Committee of the Iowa State Medical Society. It recognizes the cardinal principle that cancer control differs from other public health problems in that intelligent, lay people by the scores of thousands must in each state cooperate actively in a continuous campaign.

The medical profession today recognizes the curability of early cancer provided its diagnosis is possible and its treatment adequate and prompt. The testimony of doctors throughout the United States is unanimous in recording a marked and steady increase in the percentage of early cases coming to their attention. In spite of the great numerical increase in the number of individuals falling within the age groups in which cancer is most prevalent, the disease has actually shown signs of being checked as a cause of death in some localities; in others where the neoplasm is readily accessible it has shown actual diminution.

This fight is certain to be a long one, but the medical profession is now thoroughly aroused and realizes it owes the public two services: first, co-operation with the laity and encouragement of organized lay education under medical leadership such as that advocated by the American Society for the Control of Cancer and its Women's Field Army; and second, continued and unabating efforts to increase knowledge of and interest in the control of cancer among the members of the profession and in the establishment and maintenance of modern facilities for diagnosis and treatment.

The officials of the Women's Field Army will continue to seek the advice and assistance of members of the Iowa State Medical Society, and it is sincerely to be hoped that our members will respond to the fullest possible extent. The medical profession's share in the success of this important campaign lies in its willingness to reiterate constantly the fundamental principles of early diagnosis in lay and medical circles.

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#### MEDICAL PREPAREDNESS\*

In all probability, the next problem which will confront the county committees on medical preparedness will be that of providing medical service for communities in which the one physician has left for military service. Speaking broadly, the problem in Iowa is not a lack of physicians, but it may develop into one of distribution. The residents of a town whose doctor has entered service will not want to be without medical care, and yet they will not want to pay mileage every time it is necessary to have a physician. Possibly physicians

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\*From the Committee on Medical Preparedness.

in nearby communities can arrange to hold office hours two or three days a week which will provide for the bulk of the demand.

The medical profession cannot minimize the importance and necessity of handling such situations when they arise. Already in certain quarters it has been suggested that the number of medical students should be enlarged by ten per cent; in other quarters there is talk of lowering standards to allow alien physicians to obtain a license. An addition of ten per cent to the regular number of medical students would overtax teaching personnel and equipment and would not provide additional physicians until 1946; a lowering of the standards of medical licensure would endanger the high caliber of medical care now available to our people. With these various factors in mind, your State Committee on Medical Preparedness urges every county committee to act promptly and efficiently when a call to service leaves a part of its community without a physician.

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#### COLLECTION AGENCIES IN IOWA\*

From time to time it seems necessary for the Medical Economics Committee to issue a word of warning to the members of the Iowa State Medical Society in regard to collection agencies. For the past ten years one of the important functions of this committee has been to investigate firms engaged in this type of business in Iowa, and when a firm has been found to be operating along ethical and honest lines, that company is given cards of approval from the Medical Economics Committee. Therefore, if a doctor is approached by a collection agency representative who does not carry such a card the physician can know that the firm has not yet been investigated or that it has, and its methods of operation cannot be approved. Obviously the individual doctor can best protect his own interests and those of his patients by dealing only with those agencies which have obtained the full approval of the Medical Economics Committee.

This issue of the JOURNAL carries an advertisement from the Associated Credit Bureaus of America in which are listed the various Iowa groups. These local bureaus are responsible to their own communities for their continued existence. The Medical Economics Committee has not investigated each branch because it feels that the physicians in each city served by a bureau will be familiar with its plan of operation and can thus judge its merits. The continued success of the Associated Credit Bureaus is evidence of high ethical standards in their operation and management.

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\*From the Medical Economics Committee.



# SPEAKERS BUREAU ACTIVITIES

## RECORDING ROOM AT ANNUAL SESSION

At the annual session of the Iowa State Medical Society, which is to be held in the Blackhawk Hotel in Davenport May 14, 15 and 16, the Speakers Bureau will have Room 222 in which scientific recordings will be run continuously throughout the meeting. We hope that by this means the physicians of the state may have a clearer understanding of this new phase of postgraduate medical instruction. Many of our members are already familiar with the scientific transcriptions, but we feel this will give those physicians who have not yet heard them an opportunity to acquaint themselves with this type of program. The following recordings may be heard:

The Making of a Diagnosis

David P. Barr, M.D., St. Louis  
Head Infections in Relation to General Practice

George E. Shambaugh, Jr., M.D., Chicago  
Office Gynecology

Joseph L. Baer, M.D., Chicago  
State and City Wide Plan for the Care of the Pre-mature Infant

Julius H. Hess, M.D., Chicago  
Diseases of the Heart; Diagnosis and Treatment

Hugh McCulloch, M.D., St. Louis  
Diseases of the Gallbladder (illustrated by slides)

R. Russell Best, M.D., Omaha  
The Acute Abdomen

Arnold S. Jackson, M.D., Madison  
Diseases of the Newborn

Irvine McQuarrie, M.D., Minneapolis

## Marshall County Postgraduate Medical Course

Dr. Frederick W. Slobe of Chicago will be the guest speaker at the April meeting of the Marshall County Medical Society, at which time he will discuss Industrial Surgery. The meeting will be held in Marshalltown at Hotel Tallcorn on Tuesday, April 1, at 6:00 p. m., and Dr. Raymond S. Grossman, program chairman, urges the physicians in the surrounding counties to attend.

## Boone-Story Postgraduate Medical Course

The Boone and Story County Medical Societies will hold their April meeting in Ames at the Sheldon-Munn Hotel on Thursday, April 24, at 6:30 p. m. Dr. Victor B. Buhler, Pathologist at the Kansas City General Hospital, Kansas City, Missouri, will be the guest speaker for the evening and will present A Demonstration of Laboratory Procedures for the General Practitioner. All physicians in that vicinity are cordially invited to be present for this interesting meeting.

## Spirit Lake Postgraduate Medical Course

The April meeting of the postgraduate medical course in Spirit Lake will be held at the Antlers Hotel in Spirit Lake on Tuesday, April 15, at 6:30 p.m. At this time Dr. Maurice J. Rotkow of Des Moines will deliver an address on An Introduction to

Electrocardiography. Dr. F. L. R. Roberts, program chairman, extends a cordial invitation to the physicians in that territory to attend the lecture.

## Scott County Postgraduate Medical Course

Final arrangements have been made for the Scott County Postgraduate Medical Course which is to be held in Davenport this fall. The program is as follows:

Sept. 2 The Differential Diagnosis and Therapy of the Leukemias.

Carl V. Moore, M.D., Assistant Professor of Medicine, Washington University School of Medicine, St. Louis, Missouri.

Sept. 18 Pituitary Disorders and Their Endocrine Treatment.

Elmer L. Sevringhaus, M.D., Professor of Medicine, University of Wisconsin Medical School, Madison.

Oct. 7 Pain Relief in Labor.

The Management of Some Common Complications of Pregnancy.

John W. Harris, M.D., Professor of Obstetrics and Gynecology, University of Wisconsin Medical School, Madison.

Oct. 23 Indications for and Results of Operations on the Sympathetic Nervous System.

The Diagnosis and Treatment of Diseases of the Cranial Nerves.

Max M. Peet, M.D., Professor of Surgery, University of Michigan Medical School, Ann Arbor.

Nov. 4 Discussion of War Wounds.

Kellogg Speed, M.D., Clinical Professor of Surgery, Rush Medical College, University of Chicago, Chicago.

These meetings will be held at the Lend-A-Hand Club, First and Main Streets, Davenport, Iowa, with a lecture period from 6:00 to 7:00 p.m. and dinner from 7:00 to 8:00 p.m., followed by another lecture period from 8:00 to 9:00 p.m. Dr. James Dunn, program chairman, urges the physicians in that vicinity to plan now to take advantage of the opportunity afforded by this series of outstanding lectures.

## RADIO SCHEDULE

WSUI—Tuesdays at 1:30 p.m.

WOI—Wednesdays at 2:05 p.m.

April 1-2 Scarlet Fever

Ernest E. Shaw, M.D.

April 8-9 Diabetes

Edwin B. Winnett, M.D.

April 15-16 Acute Surgical Conditions of the Abdomen

James J. Noonan, M.D.

April 22-23 Food for Health's Sake

Health Essay Contest Winner

April 29-30 Our Responsibility to Our Children

Robert H. McBride, M.D.

# WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*  
5822 North Waterbury Road, Des Moines

*President*—MRS. ELBERT T. WARREN, Stuart

*President Elect*—MRS. W. R. HORNADAY, Des Moines

*Secretary*—MRS. FRED MOORE, Des Moines

*Treasurer*—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

## THE TWELFTH ANNUAL CONVENTION

The official call for the twelfth annual convention of the Woman's Auxiliary to the Iowa State Medical Society has been issued. The meeting will be held in Davenport on May 14 and 15, with headquarters at the Mississippi Hotel.

The preconvention board meeting will be Wednesday, May 14, at 10:30 a. m. with a luncheon following. Attending this meeting will be the officers and the chairmen of standing committees, with the county presidents as ex-officio members. All county presidents-elect and past state presidents will be welcome. Members and guests are invited to a tea at the Municipal Art Gallery from 3:30 to 5:00 p. m. A bridge party will be held at 8:00 p. m. Wednesday evening in the Blue Room of the Hotel Blackhawk. All auxiliary members and doctors' wives are invited.

The business session will open promptly at 9:15 Thursday morning, May 15, at the Lend-a-Hand Club. Reports will be given by officers, chairmen of standing committees and county presidents. The report of the winning essay will be given by the Public Relations Chairman, Mrs. W. A. Seidler, and the award of the Gertrude Downing Membership Cup will be made by Mrs. Downing.

The luncheon at the Outing Club at 12:30 p. m. is for all our visiting women and guests. Please make reservations and be at the Lend-a-Hand Club where cars will be provided to take the ladies to the club. Dr. F. P. McNamara, president of the Iowa State Medical Society, and Dr. E. B. Bush, president-elect, will be guests at the luncheon and bring greetings from the Society. A symposium is to be presented on the four fields of medicine for which there are corresponding lay organizations. It will be summarized by Dr. J. C. Hill, chairman of the Woman's Auxiliary Advisory Committee. A brief talk on medical preparedness and the national health by Major Stiles of the Rock Island Arsenal will conclude this luncheon program. The closing session of the convention will be held at the Outing Club at 3:00 p. m., followed by the postconvention board meeting at 4:00 p. m.

The annual banquet for the doctors and their wives will be held at the Hotel Blackhawk Thursday evening at 6:30.

Your president and officers are looking forward to the state meeting and hope we may have a good

attendance. Your president appreciates the loyal support and cooperation of the board and of all our Auxiliary members. Please register as soon as possible after arrival and plan to attend the Auxiliary meetings. We are sure you are interested in the progress of the Auxiliary and will want to become informed about the activities. May this full dozen years of our State Auxiliary show marked progress and prove that we are worthy helpmates for the medical profession.

Mrs. E. T. Warren, President

## A SHORT SURVEY OF PREPAYMENT MEDICAL CARE PLANS

With the present emphasis on national defense there has been an apparent lull in the constant demand that adequate medical service be provided for the people of the United States. This lull is more apparent than real, however, since there is still great activity on the part of certain foundations and in government circles, in favor of state medicine.

Repeated articles appear regarding the number of selective service men who are rejected because of physical defects. The reports of the draft boards are being used to show that "there is a great need for improved medical and dental care in the United States." It is stated that there has been no improvement in the health of the nation since the first World War, but this is only a statement for effect, based on false figures. The head of the medical division of the Selective Service Board made the statement recently that while the percentage of rejections is almost identical with that of 1917, the present health requirements are much more severe. He states that if we were selecting men on the 1917 health basis, we would be passing at least ten per cent more men than we did at that time.

What have these remarks to do with medical economics? They are pertinent only because they are being used as proof of the need for state-controlled medicine, available to every citizen regardless of ability to pay. The medical profession, as a whole, has always been willing to accept any plan which shows promise of improving the medical care of the people of this nation. Although the financial aspect of practice is important to the doctor, his major interest has always been the care of his patient; his greatest pride has not been in his income,



but in his reputation as a practitioner of high ability. No other profession, except that of dentistry, has spent so much time and effort to prevent the very conditions which make its living possible.

What has the medical profession done on the economic side to make medical service available to all, regardless of ability to pay? First and foremost, it has been willing, with few exceptions, to give needed care and to furnish medicines to the sick without thought of the ability or the inclination of the individual to pay. This has been one of the self-imposed obligations of the profession, an obligation which has been fulfilled since the beginning of this nation. It has been conservatively estimated that the medical profession of the United States gives daily over one million dollars worth of services to the needy. Their only compensation is the gratitude of the patient and the knowledge of a professional obligation fulfilled.

In a more demonstrable way the Iowa State Medical Society has been trying for many years to develop plans to provide adequate medical care for the low income groups. There are on record more than 2,000 plans which have been and are still being tried by the organized medical profession in the United States. These plans have been carefully studied by the Medical Economics Bureau of the American Medical Association and more plans are being formulated yearly. Annually more than 200 physicians from all sections of this country meet in Chicago to consider the various aspects of this problem. From this meeting the physicians return to their respective states to continue their experiments and to take advantage of the successes or failures of plans already in operation.

One of the movements for which the medical profession has been largely responsible is the development of hospital prepayment plans throughout the country. In Iowa such a plan was started over a year ago. In the beginning it was necessary to secure an enabling act by the state legislature. This was accomplished through the cooperation of the legislative committees of the Iowa State Medical Society and the Iowa State Hospital Association. A group representing the hospitals and the medical profession worked for more than six months in organizing the company and starting its operation. After a year's time there are over 20,000 individuals covered by this insurance. Hospital bills approximating \$18,000 have been paid by Hospital Service, Incorporated, of Iowa. As yet this service has been available only to industrial groups or specialized types of organizations. Present plans are to provide contracts for farm groups in the near future. This service is of great value to the subscriber, assuring him that in the event of serious illness his hospital bill will be paid in advance, at a small monthly rate. It has been proved that such a plan increases the willingness of the individual to go to the hospital when necessary, and thus the problem of securing adequate care for the low income group has been simplified.

Plans have been started in several states to pro-

vide medical and surgical care on a prepayment basis. These plans have been developed in answer to an apparent demand. However, it has been generally found that this demand also is more apparent than real, since it has been difficult to secure large numbers to accept such a plan in spite of widespread publicity and detailed work in presenting such a plan. The State Medical Society of Wisconsin developed and underwrote three types of plans in three counties, but after a year's trial was forced to abandon all of them because of inability to get enough cooperation to keep them going. Michigan has a plan in operation that is making some progress. It offers three types of contract; one for surgical benefits only, one for hospital care only and another for complete medical and surgical care. Most of the enrollments during the first year were in the surgical benefit group, but at present the chief emphasis is being placed upon medical and surgical care. Another year will be of value in showing whether such a plan succeeds. California inaugurated a medical and hospital service plan almost two years ago. Progress is slow and there is real difficulty in getting much of the population to enroll—this in spite of the fact that the "demand" for adequate medical care was so great the state seriously considered starting a controlled plan.

As various efforts on the part of the medical profession to provide plans for adequate care are studied, this fact becomes apparent; there is a demand made evident through newspaper and government publicity for a prepayment medical care plan, but, when such a plan is developed, with a fee which is adequate and reasonable, the interest of the public immediately wanes. It appears, then, that there is present in the individual an emotional interest which lags when the public is confronted with a practical plan for financing medical care. Many prefer to take a chance on having no medical bill this or any other year, and are unwilling to invest a definite sum each month to pay such a bill if and when it becomes necessary. Each individual feels that he will remain healthy, and that it is only the other person who will need an operation, develop pneumonia or have some other serious illness. Consequently, he saves nothing for medical or hospital care. However, when that unexpected illness occurs and the medical, nursing and hospital bills accumulate, these same people have much to say about the high cost of sickness. Why will the public not take the same attitude toward medical insurance as it does toward accident, fire or theft insurance?

It is admitted that all individuals do not receive adequate medical care. However, the figures of outstanding insurance companies, industrial organizations and the United States Public Health Service show that in 1939 the United States had the lowest morbidity and mortality rates in its history. There was less loss of time from work because of illness than there ever had been in this country, and far less than in any other country for which statistics were available. Finally, the health figures tentatively given for 1940 show an improvement over

1939, and although our citizens may not have ideal medical care, the standard of health is far higher than that of any other nation.

The medical profession will continue to find new ways to conquer disease, new methods for preventing illness and newer and better plans for making their services more universally available, regardless of individual financial ability or social position.

Mrs. E. E. Shaw

## MENTAL HYGIENE

MRS. E. T. BUTTERFIELD, Dallas Center

### PART II

What proof have we that mental hygiene is valuable? It aids in self-preservation, and if self-preservation is nature's first law, it is only self-management which enables us to obey that law. Today there are thousands of children who will suffer mental illnesses, and the rearing and discipline of offspring give mental hygiene its golden opportunity.

The most characteristic phenomenon of our present era is the keen interest in all things psychologic. Novelists, playwrights and poets are busy with the analysis of personality struggling with inner desires. The ministry is trying to interpret the psychology of religious experiences. Educators are developing personality instead of subject matter. Business executives are studying the application of psychology to salesmanship, advertising and personnel management. This movement was humorously depicted in a recent cartoon showing a garbage collector high up on a wagon admonishing his buddy to keep on the lookout for the last issue of *Psychology*. One reason for this is that man, after centuries of hypnotized concentration on force and materials of the world about him has been finally able to mold them to his bidding only to find that as a result of his dense ignorance of himself and his motives and of his failure in controlling human impulses of greed, brutality, selfishness, fear and lust, his world is on the verge of crashing down about his ears with the extreme likelihood that he will be annihilated in the subsequent chaos, as witness the present wars in Europe and Asia. Perhaps also the comparative freedom and leisure which modern means of transportation have supplied have permitted him a breathing spell for introspection and self-analysis. Perhaps the very great prevalence of serious nervous and mental disorders, accentuated by the intolerable strain and discomfort of modern living has impressed him with the stern necessity for giving thought to these matters. Perhaps man is unusually willing at this time to consider mental phenomena because so many of his fine hopes and brave plans which depend on external schemes for management of social problems have one by one been found wanting, and in bitter disappointment he is willing to consider those inner forces, motives and desires which determine behavior in the hope that

they will throw a new light on old discouraging problems.

The antiquity of the advice that one should choose his ancestors wisely is often recognized more quickly than its efficacy. It looks like an apparent impossibility, but we can do some 50 per cent of the work of selecting the two immediate ancestors of our own offspring. In other words, we can exercise some choice as to our marriage mate. Before one attempts to shape one's destiny he needs to know his resources, and the conditions he has to meet. We should see to it that our life does not accent the bad traits but that it develops to the highest degree the good parts of our inheritance. We should realize our inherited brain capacity and develop it to the fullest extent.

We should also look to the hygiene of the body and brain. That is, use the head to save the head. Health is wealth, although the mere acquisition of bodily health may be a curse without proper mental control. All health that is not ultimately mental health is no health at all. The brain needs healthful foods. It must have adequate rest. To this end, a person should develop good sleeping habits. The art of going to bed to sleep is a habit. Those who cannot sleep because they are worried are merely acknowledging their neuroticism. Everyone should strive to become the master, not the servant, of his thoughts. One's worries should be laid aside even as his daytime apparel is removed when he steps into bed. At first it may take violent exercise, repeating monotonous phrases, fixing the mind on one object and concentrating on it alone, or eating a light lunch to draw the blood from the brain to the stomach, but eventually going to bed to sleep will become a habit. We must also protect our brain from saturation by toxins. Thus it is important to take care of abscesses, defective teeth and tonsils; and the eyes should be checked regularly. We must not draw upon the brain to the point of depletion, and therefore, it is poor practice to indulge in either muscular or mental exhaustion.

The third rule in attaining mental health is to develop an adaptability to environment and to people. Plants adjust themselves to environment. They need plant food and moisture or they perish, but ideas never kill plants. Their superstitions or mental illnesses never lead them astray nor do their emotions cause disease. However, complex man must be mentally as well as physically adjusted. He must be able to manage the mind inside him. He must be master of his impulses, desires, moods, emotions, passions and his feelings in general. We have seen criminals who become insane after a few years in prison. The monotony of their existence palls on them and instead of calling upon their resources to adjust themselves—that is, perhaps learning some trade well or using their leisure to pursue reading of books, to writing or to other hobbies—they sit idly by and think of their sad plight. It should make no difference whether we live in the country or city, in a fraternity house or cooperative dormitory, a palace or a shack, whether we are of the social whirl



or outside it, we should cultivate the art of adaptability. One must keep in touch with the world and play a part in it. We should practice adaptability to situations and people. A boy, twelve years of age, was to speak before a crowd. When he faced the people he forgot his lines and was laughed at. At twenty years of age, he could not be persuaded to speak in public. The person who desired to acquire adaptability would have accepted the fact that he forgot those lines, perhaps even seen the humorous situation, understood why the crowd laughed and would seek a place on the next program of public speaking. By continued practice the thing would be easier. Most of us recognize this fact, but can we do it? If we cannot we are again acknowledging our neuroticism. We are not masters of our own will. Someone disagrees with us on a certain point. Our overfunctioning self-centered attitude convinces us that that person is an enemy instead of suggesting that we examine our views on the subject to see if they are beyond contradiction or argument. If we can adjust easily we have practically acquired self-management. The following rules for a unified adult personality may prove helpful in attaining this goal:

1. Neither run away from emotions, nor yet fight them. Guide them with your will.
2. Be efficient in what you do. Find the better, less fatiguing way to do things.
3. Do one thing at a time.
4. Make clean-cut practical decisions, recognize them as merely decisions subject to change in the face of new facts or additional knowledge, not as irrevocable contracts.
5. Do not accept hurry as a necessary part of modern life.
6. Do not worry. Consider first whether the problem at hand is your business. If it is not, turn to something that is. If it is your business see if it is your business now.
7. Keep work, play, rest and exercise in proper relative proportions.
8. Shun the New England conscience.
9. Do not waste energy in the peculiar processes some people seem to think necessary before they can do anything difficult.
10. To avoid breaks in character between your ideals and your everyday actions, study your part in the play, understand it, and then play it, sick or well, rich or poor, with faith, courage and proper grace.

In summing up then, mental hygiene constitutes a normalizing of our physical functions in conjunction with the development of our mental powers for the purpose of adjusting ourselves to a modern society, and to relate oneself acceptably and efficiently to the world at large. To do this, we must unify or expand our personality by putting away infantile behavior, acquiring a sound philosophy of living, cultivating our will power, controlling our emotions, and above all, we must face reality.

The End.

## DO YOU KNOW

That the increasing mortality rates from cancer make it a disease of first importance to the general public and to the medical profession?

That any one cancer is as deadly as another and that the only way to avoid the consequences is early treatment?

That it has been recognized for some time that those who are exposed to sun and wind are more likely to have cancer of the skin?

That it has been suggested Vitamin K may protect against cancer?

That there are now over 300 approved cancer clinics in the United States and that two of them are in Iowa?

That in Iowa there are two deaths from cancer every two hours and thirty-eight minutes?

That in 1937 childhood cancer caused the death of 2,290 children in the United States and that 44 per cent of those deaths occurred before the age of four?

That cancer in childhood is unusually malignant and the mortality rate high?

That cancer is not hereditary as such, and that it is not contagious?

That there is only one sure way to make certain in cancer diagnosis, and that is through microscopic examination of suspected tissue?

That cancers are usually irregular in shape, that they invade the surrounding tissues and have no limited boundaries?

That the germ responsible for cancer has still not been identified?

That a complete physical examination twice a year is a safeguard against fatality from cancer?

That early diagnosis saves 50 to 95 per cent of the victims of cancer?

That there are only three accepted forms of treatment; namely, surgery, x-ray and radium?

That the following are some of the symptoms of cancer for which everyone should be alert, and that one should consult a doctor at once if any of the following symptoms are present:

Stomach; persistent lack of appetite; persistent indigestion not due to faulty diet; pain after eating; loss of weight.

Rectum; periods of constipation followed by periods of diarrhea; abdominal cramps or sensation of inadequate evacuation; pain and rectal bleeding.

Breast; painless lumps or other abnormalities of the breast; bleeding or discharge from the nipple.

Uterus; increased or irregular discharges; return of flow after menopause.

Skin; may develop from moles, warts, scars, blemishes, "razor-blade" surgery or other home doctoring of moles and warts; growths that suddenly change color, size or texture; growths constantly exposed to irritation; sores which refuse to heal.

Throat; difficulty in swallowing or persistent hoarseness.

Tongue, mouth and lips; any sore which does not heal in ten to fourteen days; any lump or local thickening; any persistent white spots on the tongue.

### BOOK NOTES

In these feverish days when centralization of every phase of living is common talk in governmental theory, medicine is certain to be discussed pro and con. Doctors and their families have adequate access to material which opposes socialized medicine, and many are ready to read and understand both sides of the question. However, there have been few doctors who openly advocate radical changes in the present status of the profession.

We have not seen many books which present both sides of the question fairly, and the only one we have seen written by a doctor of medicine which states the case is *Medicine at the Crossroads* by Bertram M. Bernheim, M.D., associate professor of surgery at Johns Hopkins University. Although this volume was published in 1939, the main issues have not varied to any degree, and hence the book is still timely. We might add, especially timely, since we are assured on every hand that certain changes in the practice of medicine are imminent.

We do not promise that you will like Dr. Bernheim's theories, but you will admit that he proposes constructive ideas. The first argument against the book will be the fact that Dr. Bernheim has been a surgeon for thirty years, and therefore is independently ensconced in his work and the security and fame which it has brought him. Although he need not be personally worried about sociologic developments, we are of the opinion that Dr. Bernheim does have the interests of the doctors as well as the masses at heart, and that he is most sincere in his beliefs.

*Medicine at the Crossroads* is divided into two sections: Minus and Plus. In the first section the author discusses doctors as a professional group, private practice, fee-splitting (and he calls it that), surgery and ethics. In the second part Dr. Bernheim reviews the possibilities of group practice, hospital insurance, company practice, the elimination of only partially prepared men who call themselves surgeons and the tightening of the requisites for surgery, health insurance, and the American Medical Association as an organization, its good and bad points. It can readily be seen that Dr. Bernheim has tried to canvass the entire field of medicine.

In the foreword by the renowned J. M. T. Finney, M.D., L.L.D., and professor of surgery emeritus of Johns Hopkins University, we find the following comments:

"When my good friend Dr. Bernheim asked me to write the Foreword for this book, I frankly told him

that I had read it with a great deal of interest; that there was something to be said on both sides of the question under discussion; that while I disagreed with certain of his conclusions I agreed with others, and felt that his book would serve a useful purpose by helping to bring to the attention of the medical profession, and the laity as well, one of the most acute problems confronting society at the present time, namely, socialized medicine."

"... a real or fancied crisis threatens, and unless the profession realizes its own danger and voluntarily makes such changes in medical practice and medical procedure as seem more in accordance with present-day concepts, government agencies will interfere. This may result in disadvantage to the patient as well as the doctor—eventualities that should be avoided if possible."

Mrs. K. M. Chapler

### Dubuque Auxiliary

The Woman's Auxiliary to the Dubuque County Medical Society met Tuesday, March 11, at the Elks Club in Dubuque for luncheon. After an interesting talk by Miss Lorenz, our county nurse, on her work and activities, the following officers were elected for the year 1941-1942: Mrs. M. J. Moes, president; Mrs. John A. Thorson, first vice president; Mrs. Edgar Connelly, second vice president; Mrs. D. C. Sharpe, secretary and treasurer; and Mrs. Carl W. Smith, assistant secretary and treasurer.

Mrs. R. R. Harris, Secretary

### National Convention

Only a few more weeks and the members of the Woman's Auxiliary to the American Medical Association will be arriving in Cleveland for their annual convention, June 2 to 6. Have you made your reservations? If not, send your request, at once, to Dr. Edward F. Kieger, chairman of the committee on hotels and housing, 1604 Terminal Tower Building, Cleveland, Ohio. Full program notes will be found in this section next month.

### Speakers Bureau Radio Schedule

WSUI—Tuesdays at 1:30 p. m.

WOI—Wednesdays at 2:05 p. m.

- |             |   |
|-------------|---|
| April 1- 2  | Scarlet Fever, Ernest E. Shaw, M. D.                            |
| April 8- 9  | Diabetes, Edwin B. Winnett, M.D.                                |
| April 15-16 | Acute Surgical Conditions of the Abdomen, James J. Noonan, M.D. |
| April 22-23 | Food for Health's Sake, Health Essay Contest Winner.            |
| April 29-30 | Our Responsibility to Our Children, Robert H. McBride, M.D.     |



## SOCIETY PROCEEDINGS

### Cerro Gordo County

Keith S. Grimson, M.D., of the department of surgery, University of Chicago, was guest speaker for the Cerro Gordo County Medical Society Tuesday, March 11, at a meeting held in Mason City. His subject was Newer Aspects of the Surgical Treatment of Hypertension: Early Results of Total and Subtotal Sympathectomy.

C. O. Adams, M.D., Secretary

### Greene County

The regular monthly meeting of the Greene County Medical Society was held at the hospital in Jefferson, Thursday, March 13, with Robert L. Jackson, M.D., from the department of pediatrics, State University of Iowa, College of Medicine, Iowa City, speaking on Infant Feeding.

J. R. Black, M.D., Secretary

### Johnson County

The Johnson County Medical Society held its regular monthly meeting at the Hotel Jefferson in Iowa City, Wednesday, March 5. Eighty members and three guests were present. The scientific program was presented by Isom A. Rankin, M.D., of Iowa City, who discussed Subcutaneous Emphysema.

A. L. Sabs, M.D., Secretary

### Linn County

The next meeting of the Linn County Medical Society is scheduled for Thursday, April 10, when Irvine McQuarrie, M.D., professor of pediatrics, University of Minnesota Medical School, Minneapolis, will speak on Experiments of Nature in Clinical Medicine. Physicians in surrounding counties are cordially invited to attend.

J. Stuart McQuiston, M.D.,  
Chairman, Program Committee

### Madison County

The Madison County Medical Society met at the Winterset Community Hospital for a regular meeting on Monday, March 17. After a six-thirty dinner Henry G. Decker, M.D., of Des Moines, gave an illustrated talk on Epilepsy. E. T. Warren, M.D., of Stuart was a guest at the meeting, and Mrs. Warren, president of the Woman's Auxiliary to the Iowa State Medical Society, spoke to the Madison County Auxiliary.

Evelyn M. Olson, M.D., Secretary

### Muscatine County

The Muscatine County Medical Society met at the Hotel Muscatine for a six o'clock dinner on Thursday, February 20. Special guests were Mrs. B. J. Lachner of Rock Island, Illinois, who outlined the Blue Cross Hospital Plan for the medical society, Dr. Carl F. Jordan of the State Department of Health, Des Moines, and members of the Louisa County Medical Society. A technicolor film on Pneumonia was presented by F. E. Schmidt, M.D., of Chicago, and Dr. Jordan led the discussion which followed the presentation of the film.

John L. Klein, Jr., M.D., Secretary

### O'Brien County

Newly elected officers of the O'Brien County Medical Society, named at a meeting Tuesday, February 18, in Primghar include: Dr. William C. Hand of Hartley, president; Dr. James A. Wagner of Primghar, vice president; and Dr. Walter S. Balkema of Sheldon, secretary and treasurer.

### Polk County

The Polk County Medical Society and Des Moines Academy of Medicine held a meeting at Younkers Tea Room in Des Moines, Wednesday, March 19, at which time David P. Barr, M.D., of St. Louis and George E. Shambaugh, Jr., M.D., of Chicago, were honored guests. Dr. Barr, professor of medicine, Washington University School of Medicine, spoke on The Making of a Diagnosis, and Dr. Shambaugh, associate clinical professor of laryngology and otology, Rush Medical College, University of Chicago, discussed Head Infections in Relation to General Practice.

### Sac County

James W. Graham, M.D., of Sioux City, was guest speaker for the Sac County Medical Society at a meeting held in the Park Hotel, Sac City, Thursday, March 20. Dr. Graham spoke on Spine Disabilities, and J. R. Dewey, M.D., of Schaller gave the case presentation.

W. I. Evans, M.D., Secretary

### Scott County

Members of the Scott County Medical Society entertained Oscar A. Sander, M.D., of Milwaukee, Wisconsin, at their regular meeting held Tuesday, March 4, at the Lend-A-Hand Club in Davenport. Dr. Sander presented a lecture on Silicosis and Differential Diagnosis.

J. H. Sunderbruch, M.D., Secretary

### Tama County

The Tama County Medical Society met in regular session Thursday, February 27, in Garwin, and the scientific program was furnished by F. Harold Entz, M.D., of Waterloo, who spoke on The Treatment of Venereal Disease.

### Wapello County

The Diagnosis and Surgical Treatment of Injuries to the Spinal Cord and Cauda Equina was discussed by David L. Rater, M.D., of Ottumwa, for members of the Wapello County Medical Society, at a meeting held in Ottumwa, Tuesday, March 4. The lecture was illustrated by moving picture films.

### Wright County

John W. Caldwell, M.D., of Des Moines, was guest speaker for the Wright County Medical Society at a meeting held in Clarion, Hotel Moore, Friday, February 28. After the six-thirty dinner, Dr. Caldwell discussed the Recent Treatment of Pneumonia.

### DEATH NOTICES

Aschenbrenner, Carl, formerly of Pella, aged seventy-five, died February 26, en route from Farmington, Michigan, to his home in Covina, California. He was graduated in 1894 from the State University of Iowa, College of Homeopathic Medicine, Iowa City, and at the time of his death was a member of the Marion County Medical Society.

Howell, Chauncey Wyckoff, of Grinnell, aged fifty-three, died March 10 after a heart attack. He was graduated in 1911 from Northwestern University Medical School, Chicago, and at the time of his death was a member of the Poweshiek County Medical Society.

Smith, Edgar Francis, of Storm Lake, aged sixty-seven, died March 9 following an operation. He was graduated in 1908 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Buena Vista County Medical Society.

### Entering Army Service

The following members of the Iowa State Medical Society have definitely entered army service. Many other appointments are in the process of being completed and the JOURNAL will augment this list when those orders are confirmed.

Allen, Roy J., Sumner to Fort Douglas, Utah  
Amlie, Paul J., Tripoli to Fort Knox, Kentucky  
Anderson, N. Boyd, Des Moines to Camp Bowie, Texas

Brinkhous, Kenneth M., Iowa City to Camp Claiborne, Louisiana

Brody, Sidney, Ottumwa to Fort Snelling, Minnesota

Burdick, Francis D., Shenandoah to Camp Claiborne, Louisiana

Burnett, Francis K., Clarinda to Fort Warren, Wyoming

Culbertson, Robert A., St. Ansgar to Camp Robinson, Arkansas

Dushkin, Milton A., Des Moines to Fort Bliss, Texas

Ervin, Lindsay J., Des Moines to Camp Bowie, Texas

Fourt, Arthur S., Iowa City to Camp Claiborne, Louisiana

Garlinghouse, Robert C., Iowa City to Fort Snelling, Minnesota

Gleysteen, Rodney R., Alton to Marine Base, San Diego, California

Hardin, Robert C., Iowa City to Camp Claiborne, Louisiana

Harrison, Glenn E., Mason City to Camp Robinson, Arkansas

Henderson, Lauren J., Cedar Falls to Fort Ord, California

Hogan, Paul W., Waukon to Camp Robinson, Arkansas

Ihle, Charles W., Jr., Cleghorn to Fort Snelling, Minnesota

Johnston, C. Harlan, Des Moines to Camp Robinson, Arkansas

Krigsten, William B., Sioux City to Fort Snelling, Minnesota

Larson, Marvin O., Hawarden to Camp Robinson, Arkansas

Paulus, Edward W., Iowa City to Camp Claiborne, Louisiana

Petersen, Vernon W., Iowa City to Camp Claiborne, Louisiana

Prentiss, R. J., Iowa City to Camp Claiborne, Louisiana

Riegelman, Ralph H., Des Moines to Camp Robinson, Arkansas

Smith, Elmer M., State Center to Fort Meade, South Dakota

Stearns, A. Bryce, Des Moines to Fort Meade, South Dakota

Sternhill, Irving, Mason City to Camp Robinson, Arkansas

Vaubel, Ellis K., Des Moines to Fort Benning, Georgia

Weinberg, Harry B., Davenport to Fort Benning, Georgia

Wicks, Ralph L., Winterset to Carlisle Barracks, Pennsylvania

Witte, Herbert J., Omaha to Fort Lincoln, North Dakota



# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. TOM B. THROCKMORTON, Des Moines

DR. JOHN T. MCCLINTOCK, Iowa City

DR. WALTER L. BIERRING, Des Moines

DR. R. T. LENAGHAN, Clinton

DR. HENRY G. LANGWORTHY, Dubuque

## Early Jones County Medical History

FRED B. SIGWORTH, M.D., Anamosa, Iowa

One hundred and two years ago, with the coming of Dr. Clark Joslin in 1838, Jones County had its first physician. This first physician remained to give his services for sixty-two years.

Dr. Joslin's practice extended for a radius of fifty miles, and several times included territory within seven miles of Davenport. He made all calls on horseback and often brought home deer he had shot on the way. At one time, when nearly all the district was ill with fever, he made his way to Muscatine for needed medicines. At another time, it is said, he drove a cow to Dubuque (a distance of fifty miles), received \$6.00 for her and invested the money in quinine, which then sold for \$9.00 an ounce, thus taking a cow and a half to pay for it. Dr. Joslin first followed the Thomsonian method, but later took up the method of the regular or allopathic school. Dr. Joslin was a botanist with considerable knowledge of plants and herbs, and therefore grew many of his own remedies until, with the gradual settling of the county, he was able to procure drugs and medicines near by. Later, although still continuing his medical practice, he established Anamosa's first drug store.

Other pioneer physicians who were first in their communities were: Dr. Henak of Oxford Junction; Dr. W. B. Selder of Monticello in 1849; Dr. Johnson of Johnson Village in 1852; Dr. M. H. Cawkins of Wyoming in 1856; Dr. Badoff of Olin in 1859; Dr. J. M. Paul of Onslow in 1872; Dr. Alex McKean of Scotch Grove in 1875; and Dr. Carlisle of Center Junction.

Early physicians had many duties other than their practice as revealed by the facts that Dr. Johnson of Johnson Village (no longer existing) founded the town, and acted as County Surveyor and Notary Public. Dr. W. B. Selder of Monticello was one of five men to erect Monticello's first school building, and acted as parson at Monticello's first cemetery burial. Dr. M. H. Cawkins of Wyoming was the town's first mayor, being the candidate of both political parties. Dr. Alex Mc-

Kean of Scotch Grove conducted an elevator and grain business on the side.

The author remembers his father, Dr. H. W. Sigworth, telling of some of his experiences in the pioneer days when he kept horses on both sides of the unbridged river, using a boat to cross in high water. Once, when he was about fifteen miles from his office, he was called on an emergency case in the neighborhood. Rather than return to his office for the proper instruments and risk letting the patient bleed to death, he amputated the leg with hammer, chisel, saw and sewing needles without an anesthetic and with no ill results.

In 1878 the Anamosa Scientific Association was organized, and successfully conducted for at least one year. Dr. J. R. McKean was president, Dr. A. V. Eaten was vice president and secretary, Dr. E. W. Gawley was chairman of the executive committee. Following are some of the subjects treated: geology, fish culture, study of the eye, study of the ear, chemistry, diphtheria, hygiene, heat and ventilation.

In 1879 the Western Sick Benefit Association was organized in Anamosa for the purpose of affording insurance upon the mutual plan against disability by sickness or accident. Dr. M. L. Ross was examiner, and any male person between fifteen and fifty-five years of age was eligible. (No one can give any information regarding this company, which evidently went out of existence after a short time.)

Due to the efforts of Mr. Edmund Booth and Dr. Nathan G. Sales, Jones county physician, a bill was passed in the state legislature in 1849 making provision for more adequate care and education for the blind and deaf children of the state. In 1881 Dr. Martin Cawkins of Wyoming was elected to the state legislature, where he became chairman of the committee on public health. While serving in this capacity he was responsible for working through the House a bill prepared by the

State Board of Health to regulate the sale and use of kerosene oil, and oil used by miners in illuminating mines. The passing of this bill was considered very important at the time, both from a health point of view, and also as a source of revenue for the treasury of the state.

The first Jones County Medical Association was organized prior to 1875, and in that year we find Dr. Alden acting as president, and Dr. Hurst as secretary. On September 30, 1903, it was reorganized at Anamosa. The meeting was called to order by Dr. G. E. Crawford of Cedar Rapids, councilor of the fifth district of the Iowa State Medical Society. A constitution and by-laws were adopted in conformity with the requirements of the State Society. The officers elected were: president, W. R. Brock of Olin; vice president, T. C. Gorman of Anamosa; secretary, Harry W. Sigworth of Anamosa; treasurer, L. K. Bobo of Oxford Junction; delegate to the state convention, A. G. Hejinian of Anamosa; board of censors, F. W. Port of Olin, George Inglis and W. W. Hunter of Monticello. The county society at that time met semi-annually. The board of supervisors of the county at different times contracted with the county medical society for medical aid for the poor of the county. At the present time this society meets at no stated time or place, but as often as necessary to carry on its business and cooperate with the state medical program.

At the present time there are two hospitals in the county, Mercy Hospital at Anamosa, and the John McDonald Hospital in Monticello. The former was built in 1902 from funds raised mostly through gifts of the local physicians. The late Dr. A. G. Hejinian, as chief surgeon, did much to give it a widespread reputation. The Monticello Hospital was given to the town by Mr. John McDonald. Both hospitals are accessible to all doctors.

In looking over old records, we find that Anamosa in 1879 with a population of only 2,000 supported twelve doctors, and now with a considerably larger population it supports only four. It seems that perhaps the better roads, the greater amount of hospitalized cases and greater efficiency of modern medicine must be the cause of better general health throughout the county.

The present membership of the Jones County Medical Society is as follows:

James E. Davies, Oxford Junction  
Earl H. DeShaw, Monticello  
Henry F. Dolan, Anamosa  
John H. Fraser, Monticello  
Joseph A. Hoegen, Wyoming  
Harris C. Moore, Martelle

Morgan I. Nederhiser, Cascade  
(Resident of Dubuque County)  
John D. Paul, Anamosa  
Herbert Pease, Monticello  
Elwin G. Rawson, Anamosa  
Thomas M. Redmond, Monticello  
Fred B. Sigworth, Anamosa  
Cecil R. Smith, Onslow  
Colin G. Thomas, Monticello

#### MEDICAL NEEDS IN CHINA

The JOURNAL has received a copy of an interesting letter from Dr. S. H. Liljestrand, medical missionary in Chengtu, West China, which is located on the Burma Road. Dr. Liljestrand, a native of Jordan, New York, was graduated in 1915 from the Syracuse University College of Medicine, and has been in China since 1916.

The Women's Hospital connected with the West China Union University, Chengtu, was completely destroyed by fire which followed an air-raid, and Dr. Liljestrand writes, "The fire destroyed all of my cystoscopic and electrotherapeutic apparatus and the accessories of a general gynecologic clinic. Fortunately I had loaned a cystoscope to the Men's Hospital a block away. Also the radium was saved, being in a patient that night. The patient was ambulatory. In the morning her honorable husband informed us of her whereabouts and the radium was recovered! The fire also destroyed all our medical periodicals. I would be very glad if we could secure second-hand apparatus and used copies of magazines. There continues to be a great demand for our service in this war-torn section of China."

Readers who are interested in assisting Dr. Liljestrand with used instruments and material may communicate with the Medical Department, Board of Foreign Missions, 150 Fifth Avenue, New York, N. Y.

#### PREVALENCE OF DISEASE

Disease	Feb. '41	Jan. '41	Feb. '40	Most Cases Reported From
Diphtheria .....	33	51	13	Hamilton, Polk
Scarlet Fever ....	234	257	303	For State
Typhoid Fever ...	1	12	10	Story
Smallpox .....	15	16	84	Dubuque, Hamilton, Webster
Measles .....	645	585	695	Dubuque, Delaware, Clayton, Marshall, Jefferson
Whooping Cough .	133	80	37	Boone, Montgomery, Polk, Woodbury
Brucellosis .....	21	22	18	Sac, Story, Black Hawk, Johnson, Linn
Chickenpox .....	481	382	229	For State
German Measles ..	5	3	8	Boone, Buena Vista, Dubuque, Story
Influenza .....	1208	2009	223	Woodbury, Montgomery, C.C.C. Camp, Johnson, Clarke
Mumps .....	708	447	553	Woodbury, Black Hawk, Scott
Pneumonia .....	301	460	436	For State
Poliomylitis .....	3	6	7	Mahaska, Mitchell, Polk
Tuberculosis .....	4	40	62	Mitchell, Page, Woodbury
Tularemia .....	3	6	4	Washington, Woodbury
Gonorrhea .....	115	144	126	For State
Syphilis .....	184	320	270	For State



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**ARTHRITIS AND ALLIED CONDITIONS**—By Bernard I. Comroe, M.D., instructor in medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1940. Price, \$3.50.

**OBSTETRICS AND GYNECOLOGY**—Edited by Fred L. Adair, professor of obstetrics and gynecology, University of Chicago. Two volume illustrated set. Lea and Febiger, Philadelphia, 1940. Price, \$20.00.

**THE INJURED BACK AND ITS TREATMENT**—Edited by John D. Ellis, M.D., Chicago. Charles C. Thomas, Springfield, 1940. Price, \$5.50.

**PHYSICAL DIAGNOSIS**—By William Nance Anderson, M.D., associate clinical professor of medicine, University of Southern California, School of Medicine, Los Angeles. Lea and Febiger, Philadelphia, 1940. Price, \$4.75.

**MEDICAL NURSING**—By Edgar Hull, M.D., clinical professor of medicine, Louisiana State University School of Medicine, New Orleans. F. A. Davis Company, Philadelphia, 1940. Price, \$3.50.

**APPLIED PHARMACOLOGY**—By Hugh Alister McGuigan, M.D., professor of pharmacology and therapeutics, University of Illinois, College of Medicine, Illustrated. The C. V. Mosby Company, St. Louis, 1940. Price, \$9.00.

**PHYSICAL DIAGNOSIS**—By Ralph H. Major, M.D., professor of medicine, University of Kansas. Second edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price, \$5.00.

**OBSTETRICS IN GENERAL PRACTICE**—By J. P. Greenhill, M.D., professor of obstetrics and gynecology, Loyola University Medical School. The Year Book Publishers, Chicago, 1940. Price, \$3.50.

**VITAMIN THERAPY IN GENERAL PRACTICE**—By Edgar S. Gordon, M.D., associate in medicine, and Elmer L. Severinghaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1940. Price, \$2.75.

**THE DOCTOR AND THE DIFFICULT CHILD**—By William Moodie, M.D., Medical Director, London Child Guidance Clinic. The Commonwealth Fund, New York, 1940. Price, \$1.50.

**THE 1940 YEAR BOOK OF GENERAL MEDICINE**—By George F. Dick, M.D., J. B. Amberson, Jr., M.D., George R. Minot, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1940. Price, \$3.00.

**OFFICE UROLOGY**—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1940. Price, \$10.00.

## BOOK REVIEWS

### THE 1940 YEAR BOOK OF PATHOLOGY AND IMMUNOLOGY

Edited by Howard T. Karsner, M.D., and Sanford B. Hooker, M.D. The Year Book Publishers, Chicago, 1940. Price, \$3.00.

Physicians have long hoped for a readily accessible yearly collection of the important articles relating to the basic knowledge in their special fields of interest or endeavor. The 1940 Year Book of Pathology and Immunology fills this need, and should be received with favor.

Somewhat over half of the volume is devoted to pathology. This section of the book needs nothing to commend it other than the fact that it is edited by Howard T. Karsner of Western Reserve University. The editor's good judgment is attested by the selection for review of many articles of interest not only to pathologists but to clinicians. A few notable discussions concern experimental hypertension (review by Kahn), Paget's disease of the nipple (Muir), ovarian tumors with sexual endocrine dysfunction (Karsner), pathologic classification with surgical consideration of intraspinal tumors (Rasmussen, et al.), frog carcinoma (Lucké), temperature factors in carcinoma (Smith and Fay) and methods for determination of alcohol in tissues and body fluids (Levine and Bodansky). The section on immunology, by Sanford B. Hooker of Boston University School of Medicine, is carefully edited. In it there should be much of value for those interested in the problems of chemotherapy, allergy and bacterial, viral and rickettsial diseases. Noteworthy among the abstracts are appraisal of serum treatments of 600 cases of tularemia (Foshay), active immunization against tetanus (Janeway and others), treatment of acute

meningitides (Sako, et al.), studies on elimination of poliomyelitic virus in feces (Kling, et al.), progress in chemotherapy (Kolmer) and studies on bactericidal agent from a soil bacillus (Dubos and Cattaneo).

R. F. B.

### GETTING READY TO BE A MOTHER

By Carolyn Conant van Blarcom. Fourth edition. The Macmillan Company, New York, 1940. Price, \$2.50.

This 190 page booklet presents twelve interesting chapters describing, for the lay public, the modern management of pregnancy, delivery and postpartum care, and care of the baby during the first year.

One of the first chapters is devoted to a description of the female pelvic organs, and a discussion of the genital organs in respect to menstruation, ovulation, fertilization and development of the fetus. Several good illustrations of the female genital organs are included. Other chapters deal with prenatal care, nutrition and pregnancy, and general rules and instructions to be followed during pregnancy. The importance of early prenatal care receives proper emphasis. The chapter on management of labor has excellent sagittal sections of the pelvis illustrating conditions as they obtain during labor and delivery. The last four chapters are given over to a general discussion of care of the baby from the neonatal period to the end of the first year.

This book is wholesomely and plainly written in terms which the average woman, unfamiliar with this subject, can easily understand. It is adequately illustrated. This book should be in the hands of every young married woman, and every expectant mother.

A. W. B.

## HEART FAILURE

By Arthur M. Fishberg, M.D., associate in medicine, Mount Sinai Hospital, New York. Second edition, thoroughly revised and reset. Lea and Febiger, Philadelphia, 1940. Price, \$8.50.

The second edition of this volume is an exhaustive treatise with revised opinions on the causes and treatment of cardiac failure. The author clearly draws distinction between cardiac and peripheral failure, so that the practitioner can evaluate the clinical picture at the bedside. He presents the problems confronting the clinician in a most lucid and practical manner, keeping in mind that cause and effect are of utmost import in the study of heart failure.

Chapters one, two, and three present the concepts of circulatory failure, cardiac output and the velocity of blood flow. Subsequent chapters discuss arterial and venous pressure and pulse, exertional dyspnea, paroxysmal dyspnea, orthopnea, edema and cyanosis. The organs affected by heart failure are individualized and evaluated. The author devotes separate chapters to the central nervous system, compensation, arrhythmias, cardiac enlargement, cardiac pain, heart failure initiated by right or left-sided insufficiency and cardiac strain. The last six chapters deal with the treatment of the various cardiac syndromes.

This is a most complete text on a problem that is of vital importance to the busy practitioner.

J. W. C.

## FOREIGN BODIES LEFT IN THE ABDOMEN

By Harry Sturgeon Crossen, M.D., professor emeritus of clinical obstetrics and gynecology, Washington University School of Medicine, St. Louis. The C. V. Mosby Company, St. Louis, 1940. Price, \$10.00.

In addition to its excellence as a medicolegal work dealing with foreign bodies left in the abdomen, this volume is also noteworthy in that it certainly tends to dampen the surgical ardor of any reader. This latter effect is due to the fact that in this book a large number of foreign body cases following surgery are explained in detail. In a very large percentage of these cases, it seems that the surgeon involved was rather severely penalized. Numerous methods of counting for sponges are described, some of these methods being quite ingenious and others rather bizarre and impractical.

The chapter on the care and proper methods of accounting for drainage materials is especially good and is well worth the attention of any surgeon. In general, the reviewer feels that this volume is to be highly recommended as a work dealing with this specialized and extremely vital field of surgery.

D. W. C.

## THE 1940 YEAR BOOK OF GENERAL SURGERY

Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Chicago, 1940. Price, \$4.00.

The 1940 Year Book of General Surgery is a compendium of valuable and useful excerpts taken from 104 publications; in all, 767 contributions to the surgical literature are reviewed. Each anatomic region is dealt with by various authors, and in addition there are sections on anesthesia, antisepsis, operative technic, military surgery, wound healing, tumors and blood transfusions. The book is generously endowed with a considerable number of practical illustrations and photographs.

The chapter on military surgery is rather brief, but contains some of the important conclusions reached in recent military surgical practice. Generous consideration is given to both the proved and newer adjuncts in the surgical treatment of the common conditions such as appendicitis, hernia and gall-bladder disease. In general this book may be recommended as a handy reference to the important surgical literature of the past twelve months.

D. W. C.

## A TEXTBOOK OF MEDICINE

Edited by Russell L. Cecil, M.D., professor of clinical medicine, Cornell University Medical College. Fifth edition, revised and entirely reset. W. B. Saunders Company, Philadelphia, 1940. Price, \$9.50.

This edition is completely revised and entirely reset. It is a comprehensive textbook of general medicine by 130 outstanding authors; 131 additional illustrations have been included. Several new articles appear on moniliasis, equine encephalomyelitis, toxoplasmosis, riboflavin deficiency, regional ileitis and gargoylism. Many of the presentations have been partially revised, particularly with respect to therapy.

The text is concisely subdivided into sections dealing with infectious diseases, diseases of allergy, physical agents, chemical agents, intoxications, deficiency diseases and metabolic diseases. Important sections discuss the clinical pathologic phenomena of diseases of the digestive system, respiratory system, kidneys, blood-forming organs, circulatory system, ductless glands, locomotor system and the nervous system.

This text is a medical classic, complete with authoritative opinions on modern clinical problems.

J. W. C.



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### BASIC GROWTH TYPES\*

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It is a surprising fact that of approximately two billion people who inhabit the earth, probably no two have sufficient resemblance that they could not be distinguished from each other. Heredity is a very important factor in this differentiation of physical features. Heredity also determines, in part, through our nervous system, how we will react toward our environment and people, determines our personality and assists in individual identification.

Probably the factors of most importance which influence our physical characteristics and to some extent our personality, are the secretions or hormones of the ductless glands. Our physical resemblance to that of our ancestors can be due to the fact that we may inherit, along with other things, ductless glands which will function in a manner, during the period of growth and development, as did those of our progenitors. The glands of the embryo and fetus may be affected in intra-uterine development by diseases processes in the mother, so that at birth the child enters life handicapped. As an example of this we have maternal hypothyroidism producing cretinism. In postnatal life intercurrent conditions, such as various diseases, environment, nutritional disturbances, etc., may alter glandular function.

The endocrine glands which affect preadult growth are the anterior pituitary, the thyroid, the gonads, the pineal and the thymus. Of these glands the effect of the pineal and the thymus upon growth are of minor importance when compared with the influence of the anterior pituitary, the thyroid and the gonads. Pineal disturbances affecting growth are rare. Abnormal conditions

attributable to thymus dysfunction are more frequently seen than are those of pineal origin. Preadult growth and sexual development are largely contingent upon the time of output of certain hormonal secretions and the degree of function of the anterior pituitary, the thyroid and the gonads.

The anterior pituitary gland seemingly has more diverse functions than any of the other ductless glands. It is so important that the Creator has wisely placed it in a bony cavity at the base of the brain, near the center of the head, where the possibility of injury is very remote. If one is so seriously injured that a fracture of the base of the skull injures the pituitary gland, he probably will not live. The pituitary gland is not immediately necessary for life, for pituitary glands are removed from various laboratory animals for experimental purposes without causing death. However, removal or almost complete loss of function ultimately results in weakness, loss of appetite, emaciation and finally death. The anterior pituitary gland secretes hormones which stimulate growth and influence the function of the sex glands, the thyroid, the adrenals, the breasts (lactation) and other organs and tissues.

The effect of the growth hormone of the pituitary gland in preadult life is more noticeable upon skeletal development than upon the soft tissues of the body. That all tissues of the body are stimulated by the growth hormone has been amply proved by observation of patients having gigantism and acromegaly, (overgrowth occurring in postadult life), in whom all of the organs of the body, such as the lungs, heart, gastro-intestinal tract, liver, muscles, etc., develop gigantic proportions.

Another important secretion is produced by the pituitary gland, known as the gonadotropic (sex-stimulating) hormone. It is this hormone which stimulates the sex glands. Without this pituitary hormone, the sex glands would not function and consequently the individual would not mature sex-

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ually at puberty and throughout adolescence. This failure of normal production of the gonadotropic hormone of the anterior pituitary gland is precisely what happens in many instances and is responsible for a part of the picture of infantilism, (failure to mature physically and sexually).

#### THE SEX GLANDS

The sex glands have a dual function; first, the formation of the germinal elements necessary for propagation of the species, namely the ovum and the spermatozoan; and second, the production of the sex hormones. After union of the germinal elements and with early embryonic development, the sex hormones are influential in determining whether the progeny shall be a normal male or female. Later, at puberty and during adolescence, the sex hormones are responsible for transformation of the individual to normal manhood and womanhood.

However, an interesting phenomenon occurs with the onset of gonadal function, that is, the stimulation of closure of the epiphyses, (the cartilaginous caps on the ends of the long bones; see

union of the epiphyses with the shafts of the long bones is delayed and in the presence of growth hormone, the patient grows tall.

To recapitulate, the pituitary gland secretes two hormones which influence growth, first, the growth hormone and second, the sex-stimulating gonadotropic hormone. The gonads, in addition to being responsible for sex function, also influence the closure of the epiphyses.

With this information, it is now possible to understand how variations in function of the anterior pituitary glands and gonads can influence our skeletal growth, resulting in different types of individuals. These variations in function (providing no other nutritional or disease processes are involved), are responsible for the cases of infantilism, for the tall, slender type of person with long extremities, and for the person of short, stocky build whose extremities are short and whose shoulders are broad.

#### THE THYROID GLAND

At this point, it is necessary to say something regarding the thyroid gland. The function of the thyroid gland is the production of a hormone known as thyroxin. This hormone stimulates the chemical cellular activity of all body cells. If the thyroid gland functions normally throughout the growth period, its influence on variations in growth is not marked. However, if there is insufficient thyroid function during embryonic and prenatal development, the child is likely to be a cretin, which is one type of infantilism or dwarfism. If the thyroid gland secretes excessively during the growth period, the activity of all body cells will be increased. This increase of thyroid function will not necessarily greatly disturb the growth type, but it will cause such generalized metabolic disturbance that the patient will probably need surgical attention.

The point to remember is that if thyroid function is normal throughout the growth period, its influence is not as dominating as are the influences of the pituitary and the gonads. If all of the endocrine glands secrete or function normally at the proper periods in life, we have a normal, well-developed individual both physically and mentally, providing no other conditions which may affect physical growth and health, such as chronic disease processes, tuberculosis, improper diets with insufficient vitamins, etc., exercise a deleterious influence.

#### BASIC GROWTH TYPE

There are perhaps ten basic growth types of individuals. Theoretically and actually more combinations of growth types could be described, but an excess would be of no practical value and might tend to cause confusion. If the basic growth



Fig. 1. Note open epiphyses of the long bones at the knee.

Figure 1 for open epiphysis). Growth in the length of the long bones occurs in these cartilaginous caps and when these become calcified and unite with the shafts of the long bones, then further growth in height is concluded. (See Figure 5 for closed epiphysis). With early onset of sex function, these cartilaginous caps become calcified and unite with the shafts earlier than the average normal time for union, resulting in a person of short build. If onset of sex function is late, the



types are known, all of the interrelated types which are so confusing, can be more easily understood. With this information it will be possible to classify the great majority of people in regard to their preadult glandular function. We can know to a rather definite degree how their anterior pituitary, thyroid and gonads functioned in preadult life. If we are going to determine different types of growth resulting from glandular function, we must have some basis of skeletal measurement, which must be considered normal. By this statement, we do not mean that all people who do not conform in bodily configuration to this standard are not normal.

#### NORMAL GROWTH TYPE

It has been observed that if onset of gonadal function occurs (as evidenced by onset of menstruation) at about twelve years of age, certain skeletal measurements as shown in Figure 2 will be equal. These measurements are taken from the top of the symphysis pubis in the middle line. The upper measurement is from this point to the ver-



Fig. 2. Normal growth type, all measurements equal.

tex of the head. The lower measurement is from the upper border of the pubic bone to the heel, with the foot at a right angle to the leg. The third measurement is taken from the center of the sternum to the tip of the middle finger with the arm extended at a right angle to the body. This is known as the one-half span. In a person having this normal type of growth the one-half span

should be equal to the upper or lower measurements, which are also equal. Full span in this instance should equal the entire height, since upper and lower measurements are equal. The height of this type of person may be average, tall or short, depending on the hereditary tendencies. To produce this type of development, the anterior pituitary, the gonads and the thyroid function normally with relation to the time of elaboration of hormones in the growth period, the amount of hormone production and the qualitative character of same. Figure 2 shows a woman in whom all measurements are equal at thirty-one inches and the onset of menstruation was at twelve years.

Type number two, shown in Figure 3, is the individual having the short and stocky build. The lower measurement is shorter than the upper, and the arms, having long bones which grow from epiphyses, conform in growth to that of the lower extremities, and therefore are relatively short. The upper measurement, composed of the torso and head is not due to growth of long bones, but depends, chiefly, upon growth of the vertebrae, which are of rather uniform width; therefore, the upper measurement is more of a constant than is that of the extremities.



Fig. 3. Stocky type, lower measurement shorter than upper due to early closure of the epiphyses.

Figure 3 is that of a woman whose upper measurement is 32.5 inches and the lower measurement is 29 inches, a difference in these measurements of 3.5 inches. The history of this woman informs us that she had onset of sexual function, as evi-

denced by menstruation, at eleven years of age. As stated before, onset of gonadal function, which is a manifestation of maturity, stimulates closure of the epiphyses of the long bones, and the earlier sex function occurs, the earlier will the epiphyses close, resulting in shortened extremities. Mature growth is usually not complete until the age of approximately twenty-five years. The growth hormone of the anterior pituitary gland is secreted throughout life, and with closure of the epiphyses of the long bones, which precludes growth in length (height), all tissues become larger and heavier and this individual develops into the broad-shouldered, stocky type.

It has been stated above that the growth hormone is secreted throughout life. Why then, does the individual not continue to grow after approximately twenty-five years of age? The answer is that nature in some as yet unexplained way causes growth in size to cease in the normal person when maturity is reached. It is quite possible that the growth hormone is necessary in postadult life (as it is in preadult life) to stimulate replenishment of body cells which are destroyed as the result of normal wear and tear in all tissues, including muscles, blood cells, healing processes, etc. The replacement of body cells is growth which requires the presence of a growth-stimulating substance throughout life, therefore, the growth hormone of the anterior pituitary gland.



Fig. 4. Precocious puberty in child seven years of age, lower measurement less than upper.

The patient shown in Figure 4 exhibits even more strikingly the effect of early onset of gonadal function upon closure of the epiphyses than does the patient shown in Figure 3. This child is eight years of age. She had onset of menstruation at seven years of age. The cycles were every two months, of three days' duration and normal. During the past three months, the cycles were twenty-eight days in length and normal. Since onset of gonadal function stimulates closure of the epiphyses, this little girl eight years of age, should have markedly advanced closure of her epiphyses. Figure 5 shows the ends of the long bones at the knee in this child. It will be noted that they are fully developed and almost completely united with the shafts. The average age for union of these cartilaginous caps is approximately eighteen years. X-ray visualization of the remainder of the skeleton showed a corresponding advance in osseous development. As this girl becomes older, the disproportion in her measurements will become more evident. The upper measurement will far exceed the lower measurement at adult age.



Fig. 5. Epiphyseal union almost complete in child shown in Figure 4 at eight years of age.

It is quite evident that this child has just about completed her growth in height, due to the early onset of gonadal function, stimulating closure of the epiphyses. By reference to Figure 4, it will be seen that she has infantile measurements; the upper being 30.6 inches and the lower, 25.5 inches, a difference of 5.1 inches. It might be stated here that at birth the measurements of the average child are as follows: the upper meas-



urement is five-eighths of the total length of the child and the lower measurement (extremities) is three-eighths. The long bones of the extremities grow rather rapidly in length while the epiphyses are open, whereas the bones of the spinal column, which constitute most of the upper measurement, grow in all dimensions very slowly; the result is that the extremities are usually as long or longer than the upper measurement (torso and head) when growth in height is completed. Because the epiphyses are almost completely closed, this child will be of short stature and since she has not reached the age at which the growth hormone of the anterior pituitary gland will cease to stimulate growth, it is a safe prediction that she will develop a markedly stocky figure.

Figure 6 illustrates the effect of early onset of gonadal function in the male. This man, twenty-two years of age, had marked sexual development and a heavy masculine type of genital hair growth at ten years of age, which is approximately four years earlier than similar development occurs in the average normal boy. He de-



Fig. 6. Stocky type male, due to early gonadal function and early closure of the epiphyses.

veloped coarse hair on the legs and forearms at thirteen years of age and it gradually appeared over the thighs, buttocks, abdomen, anterior chest and back. This is the powerful wrestler type of individual. The glandular function which caused

the short, stocky type of development in this man was early onset of gonadal function which stimulated early closure of the epiphyses. This precluded further growth in the long bones of the extremities, and in the presence of the growth hormone the bones became heavy, the shoulders broad and the muscles short, thick and more powerful. The shoulder girdle measurement of this man is 46 inches and the pelvic (hip) girdle measurement is 36 inches, a difference of ten inches. This is the exaggerated masculine type. This type of individual has a tendency to be physically aggressive and less fearful of combat than are some other types, due to a native sense of strength.

#### EUNUCHOID TYPES

The third type of individual classified as to growth and development is known as the eunuchoid. This term is taken from the word eunuch and the suffix "oid" indicates that the bodily configuration is eunuch-like. The term is correctly applied to an adult male, whose gonadal development and function are markedly delayed and defective. The term eunuchoidism is also applied to women whose glandular function, physical make-up, measurements and symptoms are similar to those of the male eunuchoid individual. A eunuchoid person may be tall or moderately tall. The lower measurement from the symphysis pubis to the sole of the heel with the foot at a right angle to the leg is much longer than the upper measurement from the symphysis pubis to the vertex of the head. The person is long and slim and does not appear robust. Roentgenograms of the epiphyses of the long bones show delayed closure. The late closure of the epiphyses is due to marked delay in the onset of gonadal function. If the onset is early, the epiphyses close at an earlier age than the average normal time for closure. If the onset of gonadal function is markedly delayed, the epiphyses remain open longer than they should. With a normal amount of growth hormone of the anterior pituitary gland being secreted, in the presence of open epiphyses, the long bones of the extremities continue to grow in length, with the development of the type of individual shown in Figure 7.

This type of growth could continue indefinitely in the presence of the glandular function described above if nature, again in some as yet unexplained way, did not cause growth in height to cease when maturity is reached (between twenty-three and twenty-five years of age). In some of these eunuchoid persons who have reached twenty-five years of age and who have ceased to grow

in height, x-ray pictures of the epiphyses show them to be open and theoretically capable of stimulation.

There are several variations of glandular function which could cause this type of physical development. The first would be failure of the anterior pituitary gland to secrete sufficient gonadotropic hormone to cause the sex glands to function normally. The second possibility could be failure of the sex glands to respond to the normal gonad-stimulating hormone of the anterior pituitary gland. Regardless of whether the failure of gonadal development is primarily inherent in the sex glands or results secondarily because of insufficient gonadotropic hormone of the anterior pituitary gland, the epiphyses of the long bones remain open beyond the usual time for closure and in the presence of a normal amount of anterior pituitary growth hormone, the extremities continue to grow in length.

If onset of gonadal function is long delayed or if the function is markedly deficient, especially during adolescence, there will be retardation or failure of complete transformation of the boy and girl into a mature man and woman. In the boy, the face is delicate and feminine in appearance, the skin remains soft, is velvety to the touch, and appears transparent and pale. The larynx remains small and as a result of this failure of development the voice is high-pitched and child-like. There is delay in the appearance of the masculine type of hair growth on the face and body; if hair does appear on the face, it is sparse and fine. Usually there is lack of physical aggressiveness, but the mentality is normal. There is a tendency to develop an inferiority complex, which will not be good for the future of the boy. Failure of normal development in the girl during adolescence will result in similar delicate features. However, delicacy in the girl or woman is admired more than it is in the man, for it adds to femininity. In the man, femininity is not a desirable characteristic, for we have become accustomed to think of man as being strong, dominant and an able protector of the weak. While failure of the girl to develop normally may not be so noticeable as it is in the boy, the consequences for the future happiness of the girl may be even more momentous.

Figure 7 is that of a eunuchoid type boy, fifteen and one-half years of age. His lower measurement is 42 inches and the upper measurement is 32 inches, a disproportion of ten inches in the lower measurement. The measurements in this boy indicate how much more rapidly the long bones of the extremities may grow, than do the bones of the vertebral column. This growth in

the extremities is more impressive when we remember that at birth the upper measurement is approximately five-eighths of the entire length of the child and the lower measurement is only three-eighths of the total length. This boy has the feminine bodily configuration, characterized

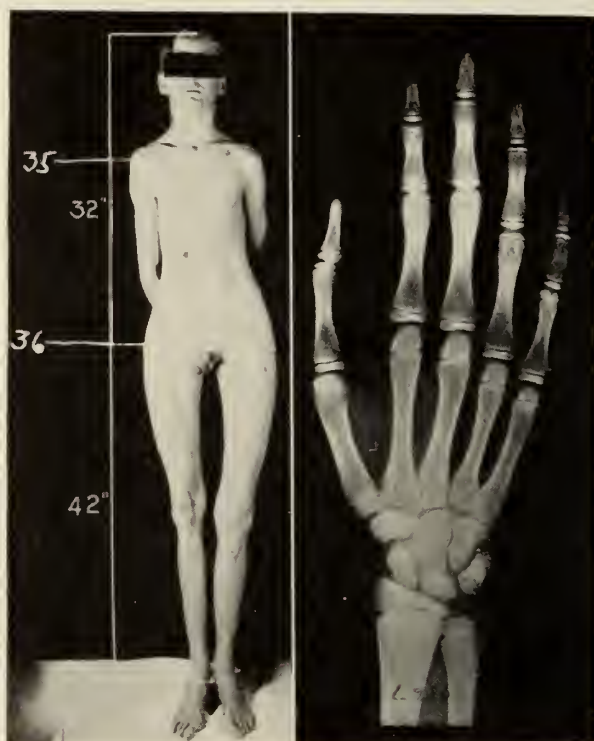


Fig. 7. Eunuchoid type; note disproportion in measurements and delayed closure of the epiphyses of the hand.

by broad hips and narrow shoulders; the shoulder girdle measurement is 35 inches and the pelvic (hip) girdle measurement is 36 inches. The masculine bodily configuration is the opposite of this.

The preadult glandular function which produced this type of individual is a normal or slightly additional amount of anterior pituitary growth hormone, with an insufficient amount of anterior pituitary gonadotropic hormone to produce secondary gonadal development and closure of the epiphyses. Figure 7 shows the bones of a hand of this boy. The cartilaginous caps should be completely united with the shafts at fourteen to sixteen years of age. They are still not fully developed and are wide open. As long as the epiphyses are open, this boy can continue to grow tall in the presence of normal growth stimulation. A second explanation for failure of this boy to develop sexually must be given. It is possible that he has sufficient anterior pituitary gonadotropic hormone to cause the gonads to



develop, but for some inherent reason they do not respond to normal stimulation and function, resulting in delayed closure of the epiphyses. It must be remembered that inheritance has some influence on our bodily configuration in that we probably inherit, along with other things, glands, the function of which tends to be similar to the functions of the glands of our progenitors.

The eunuchoid type woman has the same bodily configuration and development as the male, providing she has similar glandular function or absence of it. In the woman there may be delay in the onset of the menstrual cycle or it may be absent. If onset of the cycle occurs there may be various disturbances, such as irregularity, scantiness and pain with a tendency toward sterility. Figure 8 is that of a eunuchoid woman



Fig 8. Eunuchoid type woman, same as Figure 7 in the male.

who had onset of menstruation at sixteen years of age, and it has been irregular in occurrence and scant in amount. Note the similarity of the male and female growth and development in this type of glandular function. These persons may have a tendency to be quiet, less social than normal, introspective and a bit jealous.

The obese eunuchoid type of person has exactly the same glandular disorder as the non-obese patient shown in Figure 7, except that at least one other gland, the posterior pituitary, does not function sufficiently. This man shown in Figure 9 is of adult age, twenty-four years. Such persons are usually overweight from childhood. If they are tall, their weight may be more than 200 pounds. The upper measurement of this patient is 34 inches and the lower measure-

ment is 41 inches, a difference of seven inches. There is no secondary sexual development and the bodily contour is feminine, especially about the hips. Frequently they never find it necessary to shave. The voice may be high-pitched and childlike, due to failure of the larynx to develop.

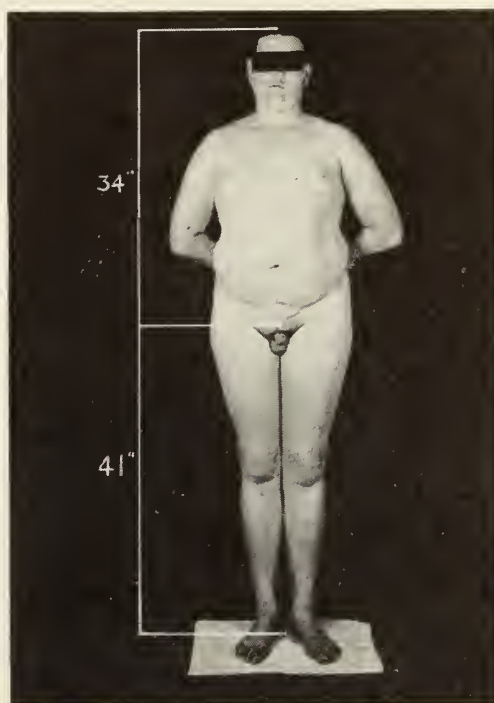


Fig. 9. Obese eunuchoid male; note disproportion of measurements; left testicle undescended, right very small and flaccid.

They may be shy and not care for the company of women for reasons which are obvious. Usually the mentality is normal.

The height of this individual is an inherited characteristic, for his parents are very tall. In other words, he has inherited a pituitary gland which functions with regard to secretion of growth hormone as did those of his parents. He differs from his parents in that he has failure of secondary sexual development. This is a result (probably) of insufficient secretion of the gonadotropic hormone of the anterior pituitary gland to stimulate gonadal function with consequent failure of secondary sexual development. A second cause for failure of secondary sexual development could be that there is sufficient secretion of anterior pituitary gonadotropic hormone, but for some reason the sex glands do not respond to normal stimulation.

This man has been overweight since childhood because of posterior pituitary glandular disorder, and evidence has been offered that the anterior pituitary gland may influence metabolism of

fats in the body. The foregoing statement is open to controversy, for some physicians believe that obesity is due to excessive food intake with decreased output. While some persons do over-indulge in food and drink and can become overweight, it is the belief of the author that in the great majority of cases there is a glandular basis for the condition. The fact that a starved patient loses weight is not sufficient evidence that obesity is due to excessive food intake, because these patients gain weight on a normal caloric diet. Some people develop a peculiar type of obesity as a result of hypofunction of the thyroid gland, but such is not the condition in this case. The basal metabolic rate of this patient is normal, his mental activity is good and he has had no evidence of thyroid disturbance.



Fig. 10. Colored boy having eunuchoid measurements but normal sexual development. White boy; infantilism, age fifteen years and seven months.

All persons having eunuchoid measurements are not eunuchoid individuals; they may be normal. The colored boy shown in Figure 10 is seventeen

years of age. His upper measurement is 33.5 inches and the lower measurement is 43.25 inches, a disproportion of 9.75 inches. Sexual development and function are normal. The father and brother of this boy are both 74 inches tall. Tallness in this instance is an inherited characteristic.

#### INFANTILISM

Infantilism is a condition characterized by failure of somatic and sexual development. Infantilism properly includes all degrees of arrested development due to a variety of causes, both glandular and non-glandular. Pituitary dwarfism is the result of an insufficient secretion of growth-stimulating hormone from the anterior pituitary gland. Usually these patients also have markedly decreased or absent gonadotropic hormone with failure of normal development of the sex characteristics. This delay may be noticeable in early childhood, and the changes which normally occur at puberty may be greatly retarded or absent. Since all body cells depend upon growth hormone stimulation, a decrease in the amount of this hormone will affect all cells. Development is uniformly arrested so that the relative proportions are preserved. The patient looks like a miniature man or woman and appears frail and weak. (See Figure 10.) The facial features are childlike. Because the larynx which contains the vocal cords does not develop, the voice remains high-pitched. The mentality is usually normal.

As the child grows older, it becomes conscious of its failure to grow and develop as do other children of the same age, and serious problems arise. The boy or girl cannot compete successfully in athletic activities with others of equal age because of the physical handicaps. Attendance at social functions is increasingly restricted, for youth desires to feel big, strong, attractive and important, none of which can be instinctively commanded by a childlike appearing person. As a result of these physical handicaps, there is danger of developing one or more inferiority complexes. Inferiority complexes may be acquired at any time in life, but when they are acquired in childhood and youth, and are allowed to persist, they are difficult to overcome. An educational inferiority complex can be conquered by attaining an education. A social inferiority complex can be mastered if it only exists in the mind. Almost all such complexes can be eliminated if there is a will to do so. Nothing is impossible of attainment if it is reasonable and if one has a sufficient desire to accomplish and a willingness to put forth the necessary effort by sacrifice for success.



Physical handicaps are more difficult to surmount than are those of inconsequential mental and psychic origin. Since infantilism, if recognized early, responds in most instances to proper care, it should not be neglected. The earlier one institutes treatment to assist nature, the more hopeful one can be that beneficial results will be obtained.

Some children having pituitary infantilism begin to grow rather rapidly when they reach fifteen or sixteen years of age, so that in a few years they are of normal size and development. This is because the anterior pituitary gland which seemingly has been dormant, assumes its normal function. If this assumption of normal anterior pituitary function occurs while the epiphyses are open, the boy or girl can grow. The longer the period of delayed growth exists, the less likely it is that the patient will attain completely normal growth and development. If growth is delayed beyond eighteen years of age, the probability that growth will occur spontaneously is increasingly doubtful. It does not seem to be a good policy to neglect underdeveloped children in the hope that fate will be kind at the last moment. It is possible to know rather definitely the cause of these conditions and the probability for relief.

There are four other growth types which will only be mentioned here, because of the necessity to keep this article within reasonable limits. These four growth types are normal gigantism, eunuchoid gigantism, acromegaly and acromegalic gigantism.

## THE SULFONAMIDES IN PUERPERAL SEPSIS

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It is exceedingly difficult to determine the therapeutic value of any new drug. Even when alternate patients are used as controls, there are too many variable factors to permit early reliable deductions. Evaluation must, therefore, depend upon prolonged clinical trial. Sufficient time and ample use have thoroughly established the value of chemotherapy generally in infectious processes. In puerperal infections, however, the picture is not so clear and the applicability of chemotherapy is limited by the extent of anatomic involvement, the patient's resistance and the character of the invading organisms. These limitations are such that it is desirable to have reasonable assurance

before undertaking treatment that the benefits derived will compensate for the possible harm. However, once the decision to employ the drug has been made, therapy should be continued until the fever subsides or until some definite contraindication arises.

It is doubtful whether the drug should be used in patients who have clinically mild infections, since most patients with ordinary puerperal sepsis recover under a simple therapeutic regimen, and the administration of sulfonamide derivatives either in full or reduced doses inevitably introduces the risk of serious complications. It is therefore essential to differentiate early in the course of puerperal sepsis between potentially mild and severe cases. Fever from septic endometritis usually appears on the second to the fourth day of the puerperium with varying degrees of tachycardia and chills. As a general rule severe infections produce high fever early and are associated with scanty lochia which is not foul smelling. On the other hand, putrid endometritis may begin in precisely the same fashion, but somewhat later, usually on the fourth or even the fifth day. The initial chill, if present, is not so severe and the temperature and pulse rate elevations are not so great. The lochia becomes profuse and often has a very offensive odor. Endometritis of either type, beginning late in the puerperium and causing only minor elevations of temperature and pulse rate, does not justify administration of sulfonamides.

Identification of the offending organism is desirable when chemotherapy is contemplated. Although it is evident<sup>4</sup> that sulfonamide therapy is useful in infections with the gonococcus, meningococcus, pneumococcus, staphylococcus and *Bacillus welchii*, its chief field of usefulness is in infections caused by beta hemolytic streptococci. Douglas<sup>4</sup> states, "I have yet to see conclusive evidence of a favorable response in puerperal infection where the infection is due to organisms other than the hemolytic streptococcus". While our experiences do not allow so sweeping a statement, since vaginal, cervical or uterine cultures were not made routinely, it is clear that patients with mild sepsis were not benefited by chemotherapy. This observation is consistent with the known association of the streptococcus with the more severe types of puerperal fever. Vaginal and cervical cultures are possibly not so valuable as those made directly from the uterine cavity, but they are more readily obtained and usually indicate the offending organism. It is recommended that an attempt be made to identify the responsible organism and that chemotherapy be used only when it is of a type susceptible to

inhibition of growth by the sulfonamides. A method for rapid isolation of beta hemolytic streptococci is outlined by Chandler and Jane-way<sup>2</sup>, who caution, "To assume that it (puerperal sepsis) is no longer any problem or to rely wholly on sulfanilamide without regard to the bacteriologic aspects of each case would be dangerous because not all strains of hemolytic streptococci are equally susceptible to the action of sulfanilamide".

Many complications attend the use of the sulfonamides and it is seldom that a patient receives a full therapeutic dose without experiencing one of the various undesired effects. Although any complication may become severe, it is generally agreed that cyanosis, nausea, malaise, dizziness, diarrhea, and mild delirium do not ordinarily provide indications for cessation of treatment. On the other hand, hemolytic anemia, leukopenia developing despite blood transfusion, hepatitis, skin eruptions, fever and hematuria are real indications to discontinue the drug. Fever due to the drug itself is especially difficult to detect, since therapy is instituted in the presence of fever from an infectious process. In such a case, the fever subsides but does not completely disappear during exhibition of the drug. After some days there is a rise of temperature and an extension of the infectious process is feared. Withdrawal of sulfanilamide derivatives is followed by disappearance of fever within twenty-four to forty-eight hours, but readministration will promptly cause reappearance of the febrile reaction. Hepatitis may develop during the course of sulfonamide treatment of an acute infection or several days after the fever has disappeared and treatment has been discontinued. In the former instance it is difficult to ascertain whether the reaction is due to liver damage from sepsis or from chemotherapy.

Naturally, when hesitation is being advocated concerning the indiscriminate use of the sulfonamides in all types of actual puerperal infection,<sup>5</sup> and <sup>6</sup> prophylactic treatment should be avoided unless it can be shown that the drug possesses great effectiveness in the prevention of puerperal sepsis among patients who have had prolonged labors, marked trauma, or excessive blood loss. Those,<sup>11, 3</sup> and <sup>8</sup> who advocate its prophylactic use report either inconclusive or only slightly improved results and it seems, therefore, that such use is questionable at the present time.

The threat of possible toxic effects to the baby following placental transmission has occasioned some hesitancy in administering large doses of the sulfonamides to pregnant women, especially during the last weeks of gestation. The authors

have observed the effect in a patient to whom the drug was administered four and one-half days before delivery, and ten days after onset of an acute gonorrheal infection resulting in Bartholinitis and vaginitis. During the time consumed in administering orally 360 grains (24 grams) of sulfanilamide the maternal hemoglobin fell 1.5 grams (Haden-Hausser). At delivery the mother's hemoglobin was 9.5 and the baby's 16.0 grams per 100 cubic centimeters. At the time of delivery the blood content of sulfanilamide was 7.7 and 7.2 milligrams per cent for mother and baby, respectively. Apparently, although transmission of the drug through the placenta occurred readily, as evidenced by the similar blood contents, the hemolytic effect on the fetus was inappreciable in comparison with that on the mother. The transmission of sulfanilamide to the baby through breast milk has been studied by Stewart and Pratt<sup>10</sup>, Adair, Hesseltine and Hac<sup>1</sup>, Hac, Adair and Hesseltine<sup>7</sup>, and others. Apparently only about 1.5 per cent of the total amount given to the mother is excreted in the breast milk so that the nursing baby cannot obtain sufficient quantities to be clinically significant. Therefore, unless there is another reason for removing the baby from the breast, nursing may continue during treatment of the mother.

Although the sulfonamides appear to be useful in the treatment of the more severe types of puerperal infection and may save some patients who would otherwise be lost, the older and proved therapeutic agents, especially blood transfusion, should not be neglected. There are still many who feel that the administration of blood from a proper donor remains the best treatment for puerperal sepsis, and that it should always be employed when the sulfonamides are given.

Having discussed certain of the limitations of the use of the sulfonamides in the treatment of puerperal sepsis, some of the shortcomings of chemotherapy will be reviewed in the light of our experience with 76 patients with puerperal fever of varying degrees of severity. There were two deaths. Forty-eight patients have been treated with prontosil alone or in conjunction with prontosil; fourteen with neoprontosil; ten with 338-A (p-sulfanilacetyl-imide); and four with sulfathiazole. The usual criteria of postpartum sepsis were observed; that is, fever of 100.4 degrees or more occurring on two or more postpartum days, except the first, with temperatures recorded every four hours. Any patient having a maximum temperature of 102.5 degrees or more, or any whose fever persisted for eight or more days was classified as severe sepsis, while fever of less severity or duration was called mild. Severe sepsis was present in



fifty-six and mild in twenty patients. The clinical diagnoses included: endometritis fifty-one, pelvic cellulitis eleven, gonorrheal salpingitis four, peritonitis four, thrombophlebitis two, while four patients remained unclassified.

All patients receiving sulfanilamide orally were given grains XX (1.3 grams) to XXV (1.7 grams) every hour for three doses, and thereafter grains XV (1 gram) to XX (1.3 grams) every four hours. Those receiving neoprontosil were given grains XX (1.3 grams) every hour for three doses, and then grains XV (1 gram) every four hours. Sulfathiazole and 338-A were administered in doses of grains XXIIss (1.5 grams) every six hours. Sodium bicarbonate, grains X (0.7 gram) to XV (1.0 gram), was given with each dose of any form of sulfonamide to counteract acidosis and combat gastric irritation. Patients too nauseated to take medication orally received by hypodermoclysis a solution of grains XII (0.8 gram) of prontosil powder dissolved in 100 cubic centimeters of physiologic salt solution. The amount given at one time did not exceed grains LX (4.0 grams) and a total of not more than grains XCVI (6.4 grams) was administered within a twenty-four hour period. Treatment with any form of the drug was usually continued for thirty-six to forty-eight hours after the temperature had dropped to normal. The average duration of fever after institution of chemotherapy was approximately three to five days.

The blood concentration of prontosil during medication ranged from 4.8 to 14.5 and averaged 7.5 milligrams per cent, while that of neoprontosil averaged 3.4, 338-A averaged 4.5 and sulfathiazole averaged 2.5.

One or more blood transfusions were used in three of the first 25 treated patients and in 35 of the last 51. This may be explained in part by a tendency early in our experience with the sulfonamides to use chemotherapy indiscriminately in the treatment of all febrile puerperal patients. Thus there were nine mild and 16 severe cases of sepsis among the first 25 patients as contrasted with 11 mild and 40 severe cases among the last 51 where the need for transfusion was more evident. At first there was also a tendency to place far too great reliance on sulfonamide derivatives alone.

There were four cases of clinical peritonitis. Two of these patients who had beta hemolytic streptococci septicemia succumbed on the ninth and twelfth postpartum days respectively (the two fatalities in the series). In one case the diagnosis was confirmed by autopsy. Since the other two individuals made satisfactory recoveries the diagnosis is open to doubt, but seemed to be

justified clinically. The febrile reactions developed on the first postpartum day and were associated with marked abdominal distention and tenderness, which persisted for many days. One of these patients ultimately developed a localized intra-peritoneal abscess which was drained. Incidentally the other patient also had a beta hemolytic streptococci septicemia and the fever lasted for 118 days. As a matter of interest, 7,800 cubic centimeters of blood were given the patient during the course of her illness. Blood cultures in this patient, and in one other having septicemia, became negative for beta hemolytic streptococci forty-eight to seventy-two hours after chemotherapy was instituted.

Aside from these there were no proved cases of septicemia. However, the clinical diagnosis was made in spite of negative laboratory results in two other patients, who had each received large doses of sulfanilamide several hours before blood culture was obtained. Because of the equivocal diagnoses these two cases were not included in the total number with puerperal sepsis.

The usual treatment complications occurred with varying frequencies, malaise being most commonly observed, and appearing in varying, usually mild degree in almost all patients. In three it was so severe that the effort expended in sitting up resulted in temporary physical exhaustion. The next most frequently observed complication, cyanosis (35 patients), varied in intensity in different patients receiving approximately the same quantity of sulfonamides. In no instance did it dictate discontinuation of therapy.

Delirium characterized by restlessness and associated with auditory hallucinations occurred in four patients, each of whom had received a total dosage of sulfanilamide ranging from 120 (9.0 grams) to 500 (33.3 grams) grains within a three to seven day period. Restraint was necessary in each instance, but the mental derangement ceased a few hours after therapy was discontinued.

In three women the leukocyte count dropped from the neighborhood of 10,000 to 3,500—4,000 within the first four days of therapy. Blood transfusions effectively elevated the white cell counts. Two days after the leukopenia had disappeared, readministration of sulfanilamide caused a recurrence of the complication in two of the three within thirty-six hours.

Four patients who received sulfanilamide developed hepatitis during the course of the acute infection, but in two others it appeared five and seven days after therapy had been discontinued and one week after the fever had disappeared. In the latter two cases the acute stage lasted

three days and disappeared as suddenly as it had developed. Both patients became markedly icteric forty-eight hours after onset of the liver involvement, which appeared with a chill, fever of 103.5 to 104.2 degrees, and nausea and vomiting. In each case there was localized pain in the right upper quadrant of the abdomen and the liver was palpable below the rib margin. Cultures from the blood stream and vagina revealed no pathogenic micro-organisms. One patient had received 510 grains (34.0 grams) of neoprontosil during seven days and the other 715 grains (47.7 grams) in six days. The former showed no abnormalities with complete roentgenologic study of the chest and gallbladder and with blood studies. At a follow-up examination six months later, she was asymptomatic. This delayed reaction, which appeared three days after discontinuing treatment with sulfanilamide, has been seen also in a gynecologic patient recently treated for an acute gonorrheal infection.

Cutaneous lesions appeared as a fine red rash over the chest and abdomen in a single patient receiving large doses of prontosil. The writers have seen one other patient who showed a generalized scarlatiniform rash following the administration of sulfanilamide alone. This was a young woman with an acute gonorrheal vaginitis. Upon cessation of therapy the rash disappeared in three to four days.

Tinnitus was observed once and dizziness twice while extreme nausea occurred in four patients receiving prontosil. Diarrhea, which was most frequently seen following dosage with neoprontosil, was severe enough to require opium during the period of therapy in each of three patients. One woman developed symptoms of severe gastritis after receiving approximately grains CCCXC (26 grams) of 338-A within an eight day interval. Withdrawal of the drug was accompanied by cessation of gastric discomfort.

#### CONCLUSIONS

It is recommended that chemotherapy be employed in puerperal sepsis only when the disease is severe and then after the responsible organism has been identified and shown to be of a type susceptible to action of the drug. It is further recommended that blood transfusion be recognized as an effective treatment for puerperal infections and that it be given consideration even when chemotherapy is employed.

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### A STATISTICAL REVIEW OF 109 CONSECUTIVE CHOLECYSTECTOMIES

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The present discussion consists of an analysis of 109 consecutive cholecystectomies with an attempt to assay the significance of results by the use of statistical formulas. We hope that publication of such a series will point out the fallacy of making dogmatic conclusions from small groups of cases.

#### MATERIAL

The operative cases were derived from private practice and treated at Mercy and St. Luke's Hospitals, Davenport, Iowa. A working clinicopathologic classification reveals the following division of cases:

Chronic catarrhal cholecystitis without stones.....	48
Chronic catarrhal cholecystitis with stones.....	35
Acute cholecystitis with stones.....	16
Acute catarrhal cholecystitis.....	10

#### METHOD OF ANALYSIS

These data have been analyzed by comparison of percentages in each of the pathologic groups. Cases of carcinoma in or near the gallbladder are not included. In the first of the three tabulations which we consider, attention is given to age, sex, acute or chronic type of physical findings and preoperative temperature. Under this group also we include laboratory findings such as leukocytosis, leukopenia, positive or negative Graham-Cole signs, icterus or jaundice and the simultaneous occurrence of clinical diabetes. Under the second group the operative findings, the incidence of cholecystostomy, the removal of the appendix and its basic pathology and the frequency of drainage are considered. In the final



group the postoperative findings, complications, hospital days, mortality and follow-up facts are analyzed.

Such an analysis in terms of the older and, until recently, commonly accepted method of forming statistics would offer in this comparatively small series of cases little or anything of new interest. However, the newer methods of statistical evaluation in medicine take into consideration the number of variable conditions influencing a human or animal subject; necessarily these variables remain indefinitely large even under the most favorable conditions. An ideal experiment is one which involves only two variables, one independent and the other dependent. One thing is intentionally varied and some other thing is measured, while everything else is kept constant. The mathematic treatment of an equation in two variables is often simple; their relation can be represented by a plane curve. The relation among three variables can be represented by families of plane curves, or by surfaces or by skew curves in three-dimensional space. While equations in four variables can be represented by families of surfaces or families of skew curves, further increase in the number of variables introduces immense difficulties. While the measurements in a satisfactory chemical or physical experiment might be related by the equation  $y=f(x)$ , for most biologic experiments they must be represented something like this:  $y=f_1(u)+f_2(v)+f_3(w)+\dots$ . In this situation the methods of statistical analysis must be used if one wishes to determine how a change in (u) will affect (y) when the effects of (v), (w) etc., are unknown. Such analysis also enables one to tell which of the variables (u), (v), etc., has the greatest influence in determining (y), for the most important variable will have the highest correlation coefficient with respect to (y). Thus, if one finds in a particular case that (w) has a correlation coefficient of either  $-1.00$  or  $+1.00$  with (y), one can say that (w) is the only variable influencing (y). If the coefficient came out  $0.00$  one could say that (w) had no influence whatever in determining (y).

When the number of observations are limited, one must consider the following questions: Do the data so far obtained prove anything? If not, how many more observations are needed? The law of Chi-square distribution is of value here.\* Mathematically speaking this is a measure of the deviation from the expected; it takes into consideration the size of the samples and indicates to what degree the element of pure chance has been influential in the results. For example, if

one has previously learned from the correlation coefficient that pregnancy increases the incidence of cholecystitis in females, then, with this group excluded one would "expect" a 50-50 sex incidence and Chi-square to be significant would range between 0.0 and 3.8. In our records women heavily outnumber the men revealing a Chi-square value of 6.7 indicating that other variables must be sought and ruled out.

Some of these variables might be: first, we see more women than men patients; second, we fail to diagnose cholecystitis in the men we do see; and third, a larger proportion of men with cholecystitis are treated medically.

It is evident that until we have excluded or maintained as constant these and perhaps other variables, or until the series becomes large enough to absorb these "chance" variables, Chi-square cannot be applied to sex incidence in cholecystitis. Other tabulations have individually undergone the same statistical procedures and conclusions.

Percentage of cases	Acute catarrhal cholecystitis with and without stones	Chronic catarrhal cholecystitis with and without stones	Acute and chronic cholecystitis with and without stones
Physical findings			
Chronic	20	94	80
Acute	75	5	20
Leukopenia	0	7	5
Leukocytosis	50	34	40
Preoperative temperature	55	10	20
Graham-Cole test			
Positive	20	42	50
Negative	4	7	7
Icterus and jaundice	55	34	40
Diabetes	4	7	7

#### CLINICAL AND LABORATORY FINDINGS VERSUS PATHOLOGY

Our division of the pathologic groups into acute and chronic, with and without stones, has the advantage of being simple, yet it is admittedly open to criticism, especially since microscopic examination probably in a majority of cases presented simultaneous acute and chronic foci. Others presented a subacute histopathology. Thus it must be admitted that the predominant pathology, acute or chronic, in the sections examined, determined the arbitrary divisions. The word "stones" includes any and all types and sizes. In many instances only "gravel" was found.

Surgical removal of the gallbladder was undertaken in 97 per cent of patients between thirty and seventy years of age. There was, however, no statistical evidence to confirm the divisions of ages, thirty to fifty and fifty to seventy years for which we found 37 and 58 per cent of cases re-

\*Statistical analysis, Snedecor.

spectively; 80 per cent of the patients were females.

The term physical findings in our tables includes a multitude of subjective and objective findings, all tending to simmer down to an impression of acuteness or chronicity. Since the Chi-square is built upon the assumption that only pure variables can be used, this type of data, therefore, does not lend itself to evaluation. Despite this, it is interesting to note the tendency for acute physical findings to occur in cases presenting acute pathology. Although laboratory findings in the table offer too few cases to be significant, the trend points toward acute pathology to present a leukocytosis, a preoperative temperature and icterus.

Only one of our cases presented anemia, upholding the time old rule that if an anemia is present, it is well to look outside the biliary tract for the cause. Seven per cent of our cases presented diabetes; four of this seven per cent were temporary in nature as indicated by a favorable response to cholecystectomy.

Percentage of cases	Acute catarrhal cholecystitis with and without stones	Chronic catarrhal cholecystitis with and without stones	Acute and chronic cholecystitis with and without stones
Removal of appendix			
Chronic	18	27	24
Negative	15	28	25
Total	33	55	49
Tube drainage	46	11	20
Cholecystostomies	20	1	6
Postoperative complications	31	22	25
Postoperative days (average)	16	14	15
Mortality rate (average)	19	3.6	7.3

#### OPERATIVE FINDINGS VERSUS PATHOLOGY

Removal of the appendix was undertaken in 49 per cent of the cases, one-half of which presented chronic pathology while the remaining were negative. This brings up the age-worn argument that gallbladder disease and appendicitis are related. However, due to our small series, the coefficient of association after Tennant and Zimmerman\* fails to bear out this association.

Tube drainage, cholecystostomy and postoperative complications (nausea, vomiting, urinary retention or wound infection) tended to be more prevalent in the acute pathologic groups.

In 109 cholecystectomies we present eight deaths, a 7.3 per cent total mortality rate. The small number of acute cases prevent us from statistically regarding the higher percentages in the

acute pathologic groups as significant. However, the trend points toward acute pathology to present high mortality rates. A critical review of our deaths reveals that the patients ranged from fifty-five to seventy-two years of age, with an average of 64.7 years; two of these were males and six were females. Six presented positive urinary findings (albumin, casts and pus); five, jaundice; three, acute physical findings; two, preoperative temperature; two, diabetes; one, cholecystostomy; the remaining seven were not drained. The operating time presented the same average as other cases. The causes of death were, coronary thrombosis in three, one of which was complicated by cirrhosis; pneumonia in one; pulmonary infarction in one; peritonitis in two, one of which was complicated by fat necrosis; and finally, one acute gastric dilatation.

The age average of 64.7 years indicates that old age is a factor in the mortality rate, but age levels, as such, should not be dogmatically adhered to. Seventy-five per cent of the deaths presented chronic nephritis, but again one hesitates to refuse a patient with low grade chronic nephritis a cholecystectomy for an acute gallbladder condition. Jaundice of the obstructive nature, (66 per cent of deaths), invariably overrules operative hesitation even when advanced age and mild chronic nephritis are present. We found coronary thrombosis in 38 per cent. In each case we were warned of a weak myocardium; poor surgical risks, yes, yet the acutely jaundiced patient (which all of these were) will only rarely be denied the advantages of exploration despite the condition of the myocardium.

#### FOLLOW-UP RESULTS

Our follow-up results were graded according to the following standards:

Grade 1. Excellent Result.

General health good; no recurrence of symptoms; no diet idiosyncrasy; no hernia or weakness of the operative wound; patient able to do ordinary work. The patients ascribe their freedom from symptoms to the operation.

Grade 2. Good Result.

General health good; mild digestive symptoms or a few foods not well tolerated; no hernia; patient able to do ordinary work. The patients ascribe their great improvement to operation.

Grade 3. Fair Result.

General health fair; bothersome digestive symptoms or occasional pain in the right upper quadrant; no hernia; patient usually able to do ordinary work. The patients believe themselves

\*Tennant, R., Jr., and Zimmerman, H. M.: Association between disease in the gallbladder and in the heart, as evidenced at autopsy. *Yale Jour. Biol. and Med.*, iii:495-503 (July) 1931.



improved by operation. Many of the patients in this group are only slightly discommoded by their symptoms and none is incapacitated.

#### Grade 4. Poor Result.

General health poor; colic or frequent and marked indigestion; hernia; unable to do ordinary work. The patients consider themselves unimproved or made worse by operation. It must be noted that patients are placed in this group who present any one of the unfavorable manifestations, although a few had several of them. Hernia occurred in one patient of advanced age.

	Grade 1	Grade 2	Grade 3	Grade 4
Acute catarrhal cholecystitis without stones	12	62	..	26
Acute catarrhal cholecystitis with stones	25	49	15	11
Acute catarrhal cholecystitis with and without stones	20	50	10	20
Chronic catarrhal cholecystitis without stones	51	24	17	8
Chronic catarrhal cholecystitis with stones	50	40	4	6
Chronic catarrhal cholecystitis with and without stones	50	31	11	7
Acute and chronic cholecystitis with and without stones	44	35	11	10

These figures present some interesting trends: First, our highest percentage of poorest results and lowest percentage of excellent results were found in groups with acute pathology; second, considering the total number of cases we can expect 90 per cent satisfactory follow-up results, that is those in Grades 1, 2 and 3. Our present follow-up with a Chi-square of 3.9 will be the first tabulation to become significant on addition to the series.

#### CONCLUSION

1. As evidenced by the use of Chi-square distribution, a small series of cases presents statistical trends, but does not lend itself to dogmatic conclusions in any instance.
2. The trend points toward acute pathology to present acute physical findings, leukocytosis, pre-operative temperature, icterus and finally a higher morality rate.
3. We could probably reduce our mortality rates if we would refuse to operate on poor surgical risks.
4. Considering the total number of operations on the gallbladder, we can expect 90 per cent satisfactory follow-up results.

#### POSTMORTEM CESAREAN SECTION

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A review of the available literature on this subject, furnished by our State Medical Librarian, reveals that only thirteen cases of successful post-mortem cesarean sections were reported in the entire world during the past decade; and that only five of this number were in the United States. The states reporting were Texas (a twin pregnancy), West Virginia, Nebraska and the District of Columbia. The principal cause of the death of the mothers was nephritis, complicated by convulsions, heart disease and cerebral hemorrhage in the order named.

The name Caesar is associated with the operation because, according to legend, the Roman dictator, Julius Caesar, was born by abdominal section in the year 192 B. C. after the death of his mother. This origin of the name, however, is denied by Hirst in his volume on obstetrics. He maintains that it comes from the Latin phrase describing the operation "caeso matris utero." Neither does a review of his life in the Encyclopedia Britannica corroborate the legend story. In fact, it is inferred that his mother lived many years after his birth. It is also stated by the same authority that the first recorded instance of a cesarean section ever performed on a living woman was by a Swiss pig gelder upon his own wife in 1500.

Postmortem cesarean section is the oldest known major surgical operation. The Roman Senate decreed in the year 715 B. C. that no woman, advanced in pregnancy, would be admitted to sepulture until her child had been removed from her body by this operation. This was one of the earliest of the Roman legislative acts. In the year 1749 the King of Sicily passed the sentence of death upon a physician who failed to perform the cesarean operation upon a woman who died in the advanced stage of pregnancy. The Senate of Venice in 1608, proclaimed the imposition of severe penalties upon every medical man, who should attempt this operation on a woman supposed to be dead, without exercising the same caution and care as if she were living. History relates more than one instance in which an incision had been made into the abdomen of a supposedly dead woman (really in syncope), for the purpose of extracting her child; subsequently it was shown that she was still living.

DeLee states that there are on record 100 cases of the spontaneous delivery of the fetus by the natural passage many hours and even days after the death of the mother. This is due to the accumulation of gases in the uterus and intestines,

thereby producing sufficient pressure to expel the dead fetus.

#### CASE REPORT

On December 3, 1939, at twelve o'clock noon the writer received an urgent call to go to the home of Mrs. P. who had been a patient under prenatal care since the third month of her gestation. She had been under observation for three years or more because of hypertension, her blood pressure ranging between 180 and 220 systolic. She was an obese multipara of Slavic descent, forty-one years of age, in the ninth month of her pregnancy. It had been eighteen years since her last pregnancy. She was the mother of three living children, all in good health, the youngest now a young lady of eighteen. Previous urinalyses were negative for sugar and albumin. Her mother died of a cerebral hemorrhage at sixty-five years of age, and a sister died of the same malady at about forty-five years of age. When first seen it was evident that she was suffering from a cerebral accident. She had stertorous breathing, the right arm and leg were completely paralyzed; she was unable to speak, but could open her mouth and protrude her tongue when requested. Fetal heart tones could be heard, but after a few hours were not positively discernible because of her noisy respirations and the thickness of the abdominal wall. Vaginal examination revealed the cervix not sufficiently dilated to admit the index finger.

Counsel was called and at the conference it was agreed that death was inevitable and would be only a matter of a few hours. It was also decided that the plan of procedure would be the delivery of the baby by cesarean section immediately after her death. Her husband had previously been advised that her condition was hopeless, that her death would be only a matter of a few hours, and that there was a possibility of saving the baby by cesarean section if it was performed immediately after the mother's death. To this procedure he readily consented. She lapsed into coma and died at 8:30 p. m., eight and one-half hours after the accident.

Immediately after her death and without taking time to listen for the heart beats of the baby, the abdomen was opened by a long incision, extending from the fundus of the uterus to a point midway between the umbilicus and the symphysis pubes. The uterus was opened in like manner and an eight pound male infant delivered. Efforts at resuscitation were begun immediately, even before the umbilical cord was severed, by alternate immersion in hot and cold water, mouth to mouth insufflation, but principally by a rotary swinging motion with the right hand on the chest anteriorly and the left

hand posteriorly going through an arc of about 180 degrees. It seemed several minutes before there was an audible gasp, occasional at first, then more frequent until in about fifteen minutes the baby was breathing regularly and crying lustily.

#### DISCUSSION

Alonzo E. Mack, M.D., of Omaha, Nebraska, reports in his case that after forty-five minutes of unsuccessful artificial respiration by the usual methods, he injected a syringe full of 1:1000 epinephrine into the cord, the point of the needle extending well below the skin surface. The cord began to pulsate and the heart beat in about two minutes. Fifty minutes after birth the child was crying lustily.

The time elapsing between the death of the mother and the birth of the child is the most important factor in saving its life. It is claimed that twenty-five minutes is the maximum time. However, a case is reported in Bedford's *Obstetrics* published in 1870. It was that of the Princess of Schwartzenberg, whose death occurred in Paris in 1810. She was in an advanced stage of pregnancy. She was one of the participants at a gay party and was fatally burned. On the day succeeding her death a living child was born by this operation. The author states that this story is uncontradicted.

Naturally the question arises in regard to the duty of the physician when confronted with a problem of this sort. What are the rights of the husband and father in giving his consent or withholding his permission after the death of his wife? Bacon in an exhaustive review of the subject in *Surgery, Gynecology and Obstetrics* in 1911, says that up until that time there was very little if any legislation in this country on the subject, not even a court decision. In his discussion of the subject he says: "A cesarean section made before life ceases to exist, would not be at the discretion of the physician, and certainly could not be justified if done without the husband's consent, much less against his prohibition." He further comments that after the death of his spouse, the rights of the child then become paramount and the operation may be performed without his consent and even against his will.

It would, therefore, seem that the duty of the physician when confronted with this problem would be to deliver the woman as soon as possible after her death by postmortem cesarean section regardless of whether the child is living or dead; and no attempt should be made to deliver her through the natural channel unless the fetal head is down on the perineum and forceps may be ap-



plied without difficulty. The time lost in this procedure may be the cause of the death of the child. As before stated it is claimed by most writers on the subject, that if the baby is delivered within twenty-five minutes after the death of its mother it has a fair chance of survival. In the reported case it is doubtful if the baby could have been resuscitated if twenty minutes had elapsed between the death of its mother and its delivery. He has had no illness since birth and his progress has been uneventful.

## CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

### TRANSTHORACIC CAVITY ASPIRATION\*

#### PRELIMINARY REPORT

MILTON LERNER, M.D., Oakdale

The tuberculous cavity has always been considered the bugbear of pulmonary tuberculosis. Around this pathologic lesion has developed the entire conception of collapse therapy. Dissatisfaction with pulmonary collapse has been repeatedly emphasized by various authors. It has seemed wasteful to effect collapse of large areas of tissue, when in reality the cavity itself was the lesion requiring treatment.

#### HISTORY

The conception of direct therapy to the cavity dates back many years. As early as 1845, Hastings and Stork<sup>1</sup> performed direct aspiration of tuberculous cavities. Since that time there have been repeated reports of aspiration and surgical drainage of cavities. In 1901, Sarfert<sup>2</sup> collected all the early cases up to that time. As late as 1937, Eloesser<sup>3</sup> performed catheter aspiration in two cases. He concluded, however, that the procedure was too dangerous to warrant continued use. Other workers have attempted to treat the cavity *per se* by the use of intracavitary medication. MacDowell<sup>4</sup> reported the use of a colloidal solution of copper morrhuate while Coryllos<sup>5</sup> injected a strong solution of silver nitrate into the cavity. The latter worker was attempting to bring about occlusion of the draining bronchus. That all these methods fell short is witnessed by the fact that none of them has enjoyed widespread use.

In the spring of 1938, Monaldi<sup>6</sup> performed catheter aspiration for tuberculous cavities, with the idea in mind of obtaining better drainage.

Because of the startling results in closing the cavity, the author concluded in his preliminary reports that under very restricted conditions, the procedure was one of choice in the treatment of tuberculous excavations. A large volume of literature has appeared since Monaldi's first report. For the most part, these appear in foreign publications. Within the last several months, American workers have published their results and experiences with this method.

#### THE THEORY OF CAVITY CLOSURE

In our studies on the aspiration of cavities, we have been impressed by the rapidity with which these cavities may decrease in size. We have tried to correlate the known methods of cavity closure with our findings and experiences in transthoracic cavity aspiration.

Cavity healing may occur in several ways. The earliest recognized method was a replacement of a previous excavation by contracting fibrous tissue and overgrowth of this tissue to obliterate the cavity space. There can also occur an inspissation of cavity contents, secondary to an obliteration of the draining bronchus, from any cause. When such a process occurs, the inspissated material becomes chalky, well encapsulated, and for all practical purposes is undergoing satisfactory clinical healing. More recently, the importance of atelectasis in the closure of cavities has been widely discussed. Chief among the proponents of this theory is Coryllos<sup>7</sup>. This author presents a large amount of experimental data to show that atelectasis exerts a favorable influence on pulmonary tuberculosis. This theory has been widely criticised, the chief criticism being that, clinically, the appearance of a stenosis of the bronchus indicates a serious pathologic lesion, in that supuration occurs distal to the occlusion.

One other type of cavity healing should be considered, despite the fact that it is probably of uncommon occurrence. Pathologists have recently called attention to the so-called "open" cavity healing. By this is meant that, despite the x-ray appearance of large excavation, the patient has a negative sputum, whereas previously it had been positive. A recent study by Auerbach and Green<sup>8</sup> clarifies the method by which such cavity healing may occur. They have termed this "cleaning" of a cavity, and have emphasized that such healing may occur in the face of widely patent bronchi. We should like also to state that in several foreign articles the importance of pericavitary emphysema has been emphasized. Monaldi<sup>6</sup> himself has stated that the closure of cavities was in part due to the ballooning of the alveoli adjacent to the cavity and a re-expansion

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of the atelectatic tissue in the cavity wall. There is question as to whether this emphysematous change is the cause or result of cavity healing. All texts of pathology mention and describe the presence of emphysema around cavities which have either closed or are closing spontaneously.

It is difficult to correlate the findings in transthoracic aspiration with any one of the above mentioned processes. Certain factors speak against each theory. Complete necropsy studies have not been obtained in patients undergoing cavity aspiration for any period of time, so that the components, the alveoli, the bronchi and the cavity wall have been inadequately studied. From our own experience we feel that the bronchus can have little importance in the closure of these cavities. This does not mean, however, that bronchial occlusion is not an important factor in considering the cavity for aspiration. The study of histologic sections of cavity walls shows that the inner lining is composed of caseous material abounding in tubercle bacilli, with tuberculous granulation tissue in its lower layers. It seems reasonable, therefore, to assume that the application of suction to a cavity and thereby to the cavity wall facilitates the mechanical removal of this caseous matter. Associated with this, the maintenance of constant negative pressure within the cavity must have an influence on the surrounding parenchyma. If the bronchi draining this cavity are narrowed or stenotic, so that no air can enter from the bronchial tree, the negative pressure within the cavity can more easily and more constantly be maintained.

We have tried to emphasize three factors: first, the necrotic, caseous inner-lining of the cavity; second, the maintenance of negative pressures and its effect on the surrounding parenchyma; and third, the relative patency of the draining bronchus. By a combination of all these, cavity healing may occur under the influence of constant transthoracic drainage. The necrotic inner-lining is slowly but constantly removed, and with its removal there occurs a cleaning, both of the caseous material and of the tubercle bacilli. This leaves an underlying layer of a relatively sterile, granulating surface. Under such conditions epithelization will occur, with ingrowth either from the external tract or from the bronchus. This process has been observed by direct inspection of the inner surface of the cavity wall. Under these conditions it is seen that the inner wall is smooth and glistening, and large patches will show no evidence of caseation. These clear surfaces bleed easily and have the appearance of fresh granulation in the depths of a wound<sup>9</sup> and <sup>10</sup>. We

have assumed that, coincident with this process, there occurs a ballooning or an emphysema of the surrounding parenchyma, which allows for the shrinkage of the cavity. As this process continues, there is an overgrowth of nonspecific granulation tissue which will effect closure of the cavity by approximation of the walls. Thus it is seen that cavity closure by this treatment is not represented by a single factor but by multiple factors, each dependent upon the other.

#### THE EFFECT ON THE LUNG OF CHANGING INTRACAVITARY PRESSURES

In the discussion above we have stated that the application of suction to the cavity itself must also bring about a change in the pressure within the surrounding parenchyma. If this is true, then several important questions come to mind: first, will there be any deleterious effect on the parenchyma if it is entirely free of disease; second, what will be the effect when quiescent lesions are present in the pericavitary parenchyma; and third, what is the effect when active lesions are present?

In considering the first, we have no available data regarding changes in normal tissue under the effect of changing intracavitary pressures. We can assume that the effect is somewhat comparable to the changes occurring with emphysema, that is, the destruction of the alveolar wall and a decrease in the elasticity of the tissue. Of more importance to us is the effect of this changing pressure to either quiescent or active lesions. The application of suction to a quiescent lesion is comparable in some respects to the re-expansion of a pneumothorax, when it is felt that the lesion for which pneumothorax was induced is quiescent. Only too often, such lesions again become progressive, and occasionally cavities make their appearance. However, when active lesions are present such a probability becomes even greater. In three of our cases we have been able to observe the effect of changing intracavitary pressures on surrounding active parenchymal lesions. In all three the treated cavity became smaller and the material aspirated through the catheter became negative for tubercle bacilli, yet the surrounding parenchymal lesion progressed and eventually excavated.

From an x-ray standpoint we have been able to demonstrate changes in the pericavitary tissues. Shortly after the application of suction there frequently appears a diffuse clouding, associated with temperature rise and some local pain. We have interpreted this as either edema of the pulmonary parenchyma secondary to the suction,



or possibly subcutaneous edema about the sinus tract. We lean more toward the former view. The clouding slowly resorbs leaving a clear parenchymal shadow with no definite residue. We believe, but have insufficient studies to corroborate the view, that in many cases the application of suction in some way stimulates the overgrowth of dense fibrous tissue. In the postmortem specimen the tissue about the cavity and sinus tract was markedly thickened and densely fibrous. In those cases in which the cavity was situated in an atelectatic lobe, we have been unable to demonstrate any more than a reduction in cavity size. We have not seen re-aeration of the atelectatic tissue.

#### SELECTION OF CASES

To date we have used transthoracic aspiration in cases in which no other therapy was possible. The nature of the pathologic lesion varied from egg-sized cavities in a densely atelectatic lung to immense excavation of an entire lobe. In several of the patients the cavity treated was the only lesion present. In most of them, however, multiple lesions were present and treatment of the one cavity was purely symptomatic. Monaldi has used this procedure in a great variety of cases. Dolley<sup>11</sup> recently discussed the value of the treatment, and his conclusions concerning cavities amenable to transthoracic aspiration are as follows: The cavity with a thin wall and of the balloon type, and not embedded in atelectatic tissue, offers the best prognosis for early closure. We have had several such cases and we believe that they represent the type of cavity in which the bronchus is either stenosed or intermittently blocked. The latter probably seems more likely. It has been our practice to determine the intracavitary pressures on all our cases before introducing the catheter. These thin-walled cavities of balloon type almost invariably have positive pressures, and we have been able to obtain pressures as high as +14 centimeters of water. It is felt by Monaldi that such relative stenosis favorably affects the progress under aspiration. Another important criterion is that the wall of the cavity should not be widely adherent to the parietal pleura; in other words, those cases in which the cavity is well surrounded by air-bearing tissue are more effectively treated. The cavity must be so situated as to allow for easy approach through an intercostal space.

The presence of all these favorable conditions, however, is not absolutely necessary. We have treated cases in which the only indication present, as mentioned above, was the easy approach to the

cavity through an intercostal space. In these cases the cavities were huge, and they were evidently in dense atelectatic tissue. The parietal pleura and the cavity wall seemed to be one, and yet we have been able to show a definite improvement in the patient's condition as well as a definite tendency toward closure.

#### TECHNIC

Kupka and Wells<sup>12</sup> in September 1940, reported on the technic which they employed in this treatment. The method employed by us varies somewhat, and was worked out by Dr. A. Guggenheim<sup>13</sup> of Denver. The instrument employed is a modification of that used by Bottari. In all our cases the following preliminary studies were done: Daily sputum weights were obtained for a period of several weeks before the introduction of the catheter. During this time several attempts were made to find a free pleural space. It is absolutely essential that the pleural leaves be adherent at the point at which the catheter is to enter the cavity. If the pleura is free, methods are taken to obliterate the space. For this purpose oil, blood, hypertonic glucose solutions and many other procedures can be used. Shortly before the catheter is to be introduced, and preferably at a separate sitting, the cavity is needled and intracavitary pressure readings are obtained. At this time a small amount of an opaque oil is injected through the needle and x-rays are taken. This latter procedure has helped in definitely outlining the exact extent of the cavity. We would like to emphasize the importance of taking lateral films, because in many cases it will be seen that a single cavity in the anteroposterior view is in reality multiple when viewed from the lateral aspect.

On the following day the patient is given a small amount of sedation, and under fluoroscopic guidance the trocar is inserted into the cavity. It is wise to determine with the needle the exact depth at which the cavity is reached. The trocar is then removed, and a rubber catheter is inserted through the cannula. We feel that it is better to introduce a small catheter at first and for this reason we have routinely used a No. 8 French. The following day suction is applied through the catheter. All the authors have recommended withholding suction for a period of twenty-four hours. We have found it wise to anchor the catheter in place by the use of suture material tied to the catheter near its introduction into the tract, and kept in place with adhesive strips. In this way the catheter will be prevented from being extruded with coughing efforts.

## COURSE UNDER TREATMENT

In the absence of other tuberculous foci, we have been able to observe, within two or three weeks, a conversion of the sputum. The aspirated contents, however, remain positive for a longer period of time. The time interval is variable, and probably depends upon the age of the lesion, the thickness of its walls and the amount of caseous changes in the surrounding tissue. The aspirated material is at first blood-tinged, but after a period of two or three days becomes frankly purulent. Throughout the period of aspiration, however, microscopic blood can be detected almost without exception. The longer the aspiration is continued, the more liquid do the aspirated contents become. The quantity of material obtained varies widely, and in one of our cases as much as 100 grams in twenty-four hours were obtained. The amount of material, however, does not seem to bear any relation to the Gaffky count. It appears that, whereas the amount is at first small, with continued aspiration it gradually increases, and then decreases as the cavity progressively decreases in size.

It has been gratifying to notice the improvement which these patients undergo while being treated. Many of them were in desperate condition; they were raising large amounts of foul sputum, they had distressing cough, were markedly toxic, and had the appearance of having lost morale. After short periods of treatment a change in both mental and physical condition was noted. In the toxic cases we have demonstrated a reduction in the toxicity, and even when bilateral lesions were present, there has been an apparent improvement on the untreated side.

The outstanding feature in this treatment has been in the x-ray studies. These patients are closely followed along this line, and in several we have been surprised to note with what rapidity reduction in size of the cavity can occur. Whenever possible, the cavity has been outlined with lipiodol to delineate its exact size more clearly. In several cases we have noted that the cavity becomes irregularly smaller, and out-pouchings and tracts may appear that were not originally present. We have made successful attempts to outline the draining bronchus, and it was demonstrated to our satisfaction that the bronchus is patent in a sufficient number of cases. In no case have we been able to demonstrate complete obliteration of the cavity, although there are several patients in whom the cavities have become so reduced in size that the only remaining remnant is at the tip of the catheter.

Further laboratory studies, with special refer-

ence to the blood picture and the sedimentation rate, have been made, but no particularly noteworthy findings can be demonstrated. In several patients there has been a reduction in the sedimentation rate, while in others we have been able to show a decrease in the polymorphonuclear leukocyte count, with a lowering of the leukocytic index. These latter findings, however, have not occurred in all cases and are still open for further study.

We have been particularly attentive to the aspirated material, but have been unable to work out complete bacteriologic studies. At weekly intervals, specimens are obtained, and we have determined the Gaffky count and the hydrogen ion concentration. Monaldi<sup>6</sup> has reported that, with a decrease in the Gaffky count, there is a concomitant increase in the hydrogen ion concentration. He illustrates a definite ascending curve of the Gaffky count. In our studies we have been able to demonstrate such a finding only occasionally. In the patients in whom such was demonstrated, however, it was very apparent. In those in whom tuberculous foci outside the treated cavity were present, the aspirated material became negative long before there was any appreciable change in the Gaffky count of the sputum. As a matter of fact, we have been able to make the diagnosis of extracavitary lesions in several patients in whom this occurred. When the diagnosis of extracavitary disease was made, with the lesion in the same hemithorax, the lesion having appeared either before or during the therapy, we have on several occasions performed an associated phrenic paralysis. In one patient in whom fresh nodules appeared after an ineffective pneumothorax was allowed to re-expand, phrenic paralysis was induced before the onset of cavity aspiration. We have argued that this procedure is feasible because it allows for greater relaxation of the treated lung. We have observed these patients for too short a period to make any definite statement as to the usefulness of the combined procedures.

The course these patients may take, as determined from our series, falls into three categories. In those in whom the cavity was isolated and there was absence of any other foci, we believe there may be some possibility of complete closure and eradication of the disease. In that group of patients with multiple cavities, we have been able to improve the patient's general condition remarkably. In one case in which there were bilateral cavities, we were able to demonstrate retrogression on the contralateral side. Perhaps sufficient improvement may occur to allow



for surgical collapse at a later date. In a third group, composed of one patient, the excavation was non-tuberculous and material from this cavity was negative for tubercle bacilli. This case represents the only one in which no apparent benefit was derived from continued aspiration.

Our own studies do not allow us to make any statement concerning the duration of treatment, nor can we state with certainty just when the catheter should be withdrawn. Many of our patients have remained persistently negative over a period of several months, and yet we feel that it would be unwise to discontinue suction. In one report<sup>14</sup>, in which the catheter was removed after a variable period, the author observed rapid re-opening of the cavity, and eventually the patient required thoracoplasty to control the lesion. We are in agreement with others, that this procedure should not cause one to lose sight of the importance of more established surgical measures. However, we do feel that when a patient cannot, for one reason or another, withstand surgical collapse, transthoracic aspiration may be of some value in bringing about clinical improvement.

#### RESULTS

We have treated fifteen patients by the method of continuous suction. Of these, fourteen were definitely tuberculous and one had a chronic lung abscess with associated bronchiectasis. Thirteen are still receiving suction with the treatment lasting up to five and one-half months.

Of the fourteen treated cases there was one death due to extension of disease secondary to an hemoptysis outside of the treated cavity. Of the treated patients, the cavities were multiple in nine and single in five. Studies up to the present time indicate that in all those with multiple cavities the sputum remains positive, whereas the aspirated material is positive for tubercle bacilli in five and negative in four.

In the five patients with cavity as the only lesion, the sputum and the aspirated material of four are negative for tubercle bacilli, but remain positive in the other. In those patients in whom there was conversion of the sputum the time interval varies from ten to thirty-four days with an average of twenty-four days. Similarly the interval for conversion of the aspirated material varies from fourteen to sixty days with an average of thirty-seven days.

#### CASE REPORTS

B. V., No. 9936, a white female, thirty-two years of age, was admitted July 2, 1940, with a history of onset of illness in 1928. After a period of sanatorium care the disease was pronounced

arrested and she returned to her duties. There was recurrence of symptoms with hemoptysis in May, 1937. Left pneumothorax was ineffective. On admission the vital capacity was 900 and an x-ray revealed a large left apical cavity with bilateral emphysema. Transthoracic cavity aspiration was started September 24, 1940. The intracavitary readings were +8, +3 centimeters of water. X-rays revealed marked decrease in size with sputum conversion by October 30, 1940, and conversion of the aspirated material by November 30, 1940. At the present time the cavity is remarkably diminished in size. The remaining lung fields are clear and her general condition is much improved.

M. D., No. 9828, a white female, forty-two years of age, was admitted March 9, 1940, with the story of onset in March, 1939, with cough and expectoration. X-ray and sputum examination in February, 1940 revealed pulmonary tuberculosis. On admission the patient was acutely ill and x-ray revealed an extensive bilateral exudative process with a large excavation at the left apex. On routine bed rest the exudative lesion retrogressed but the apical cavity remained unchanged. On November 2, 1940, transthoracic cavity aspiration was started and several intracavitary pressure readings were -5 centimeters of water. The cavity size decreased rapidly. Sputum was converted by November 12, 1940, and aspirated material by November 23, 1940. The remaining lung fields are clear. At the present time no excavation is visible by ordinary x-ray examination.

R. D., No. 9922, a white male, thirty-four years of age, was admitted June 17, 1940, and dated the onset of his illness to February, 1936 with pleurisy and wheezing. In March, 1936 he developed aphonia, and x-ray of the lungs revealed tuberculosis. Sanatorium care from 1936 to 1940 was without benefit. During the interval the patient had several hemoptyses. An attempted left pneumothorax in February, 1939 was unsuccessful, and a permanent left phrenic paralysis was induced in March, 1939. On admission to Oakdale there was bilateral cavitation. The right mid-lung lesion was progressive but no free pleural space could be found. On September 27, 1940, transthoracic cavity aspiration was started. The intracavitary pressures were -3, -2 centimeters of water. The sputum was reduced from 80 grams daily to less than 45. The x-rays revealed progressive decrease in the size of the treated cavity. The aspirated cavity contents became converted by November 16, 1940; however, the sputum remained highly positive. The contralateral cavity was probably the source of in-

termittent hemoptyses which were not controlled with phrenic crushing. On December 19, 1940, a severe hemoptysis occurred, followed by progressive pneumonic process and death on December 25, 1940. The autopsy report of the pathologist, Dr. L. J. Galinsky is as follows:

*Pleural Cavity:* The right lung is partially collapsed. The fascial and muscular structures are densely adherent along the sinus tract. There is no evidence of any extension of inflammatory process in the tissue adjacent to the sinus.

*Pleurae:* The left pleurae are densely adherent and in the apical portion form a dense homogeneous fibrous membrane measuring five millimeters in thickness.

*Left Lung:* The left upper lobe is practically unaerated and is composed of dense smooth glistening tissue resembling fibrous tissue. Within it, immediately posterior to the fused pleura, is a slit-like opening three by one centimeters which represents the residual cavity. The wall is smooth and reddish brown in color; no residual caseous material is seen. The capsule differs from those of other tuberculous cavities in that it has a somewhat reddish tinge and grossly appears less friable. The bronchial orifices are widely dilated with a granular appearance in some areas.

*Left lower lobe:* The tissue is well aerated with scattered irregular gray nodules which are elevated slightly above the surrounding tissue. At the apex, just beneath the interlobar fissure and deep to the fused lateral pleura is an excavation measuring three centimeters in width. There is a definite yellow capsule beyond which is seen a narrow red zone of granulation tissue. The cavity communicates with the lower lobe bronchus. At the base and medially is seen a reddish triangular zone of indurated, unaerated tissue measuring four centimeters in its greatest diameter. Within this area are many acinous nodose nodules. Posteriorly there are scattered areas of emphysema.

*Right lung:* The right upper lobe is crepitant throughout. The bronchial orifices are enlarged. Irregular fibrous bands and occasional encapsulated nodules are found. The right middle lobe is crepitant with the exception of scattered greyish nodules. The bronchial lumens are narrowed with some thickening of the mucosal structures. The right lower lobe is moderately crepitant throughout except for lobular consolidation in the anterior portion. In this area is seen a soft excavation 1.5 centimeters in diameter in which the contained material has not been completely liquefied and extruded. Basally there is seen an area of consolidation similar to that above. The bronchial or-

ifices are dilated and tortuous. At the posterior aspect is a 3.5 centimeter excavation, which is in communication with the lower lobe bronchus. Surrounding this cavern is an area of deeply red congested tissue.

*Microscopic Section of Treated Cavity:* The caseous material is almost completely lacking so that the inner wall of the cavity is formed by the vascular specific tuberculous granulation tissue. Beyond this is seen a tremendous overgrowth of the fibrous wall. There is no evidence of epithelization of the inner wall in the sections studied.

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### THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

#### CONGENITAL HYPERTROPHIC PYLORIC STENOSIS

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The Fredet-Rammstedt operation, which is generally accepted as the treatment of congenital hypertrophic pyloric stenosis, has saved the lives of many infants. Indeed the improvement in the results of treatment in this condition represents one of the great triumphs of surgery. We are reporting a case not because anything new has been studied, but in order briefly to review some of the fundamental principles upon which the success of the operation depends.



## CASE REPORT

The patient, a month old boy, was admitted to the Finley Hospital January 29, 1941, because of "persistent vomiting after feeding, constipation, and loss of weight."

*Family History:* The mother and father of the patient were well. He had one brother one year old who was healthy.

*Past History:* Negative.

*Present Illness:* The patient was born after a normal pregnancy and delivery. He appeared vigorous at birth. For two weeks he gained in weight and retained the breast feedings. Then he began to lose the feedings within a few minutes or a half hour after nursing. The vomiting gradually became more forceful and during the week before admission had been projectile. His mother noted that the patient became constipated and passed very little urine. Several food formulas were tried but the vomiting persisted and since he was losing weight he was brought to the hospital.

*Physical Examination:* The patient, a baby boy, weighed five pounds and six ounces. The skin was flabby and dry due to dehydration. The general examination was otherwise negative. The upper abdomen was distended and tympanitic. Gastric peristaltic waves could be seen extending

report was as follows: "There was rather marked distention of the stomach with gas, also active peristalsis. Only a small amount of barium began to pass through the pylorus in half an hour. Films taken at half-hour intervals show only a moderate emptying of the stomach. After twenty-four hours there was still some barium left in the stomach. The findings would strongly suggest an early hypertrophic pyloric stenosis. The chest was negative on fluoroscopy."

*Conclusion:* Probable hypertrophic pyloric stenosis. (See Figs. 1 and 2.)



Fig. 2. Roentgenogram taken after six and one-half hours showing retention of the barium in the stomach.



Fig. 1. Roentgenogram showing barium in the stomach after twenty minutes.

toward the midline where on deep palpation a mass the size of a knuckle could be felt at the level of the pylorus although it seemed situated deeper than would be expected. Because of this it was decided to make an x-ray examination of the stomach. The

*Treatment:* Because of the qualification of the x-ray diagnosis it was decided after consultation to try to relax the pylorus with atropine, but this procedure was without benefit. In the meantime physiologic salt solution and one per cent glucose were given subcutaneously until 750 cubic centimeters had been absorbed. Because the vomiting persisted during the two and one-half days in the hospital, it was decided to operate.

*Operative Notes:* Ether was used as the anesthetic. After opening the abdomen, a hard mass was found at the junction of the pylorus and duodenum. The serosa was incised the length of the mass and the hypertrophied muscle was identified and then divided down to the mucous membrane. The cut ends of the muscle were then separated further by the fingers. After being certain there was no leakage from the mucous membrane the stomach was replaced and the abdominal wound closed. The child left the operating table in good condition.

*Subsequent Course:* Feedings were begun six hours after the operation and for about twenty-four hours there was slight regurgitation but this gradually cleared and all feedings were retained. The child gained steadily and was discharged from the hospital on the sixteenth day after operation.

#### GENERAL DISCUSSION

The main considerations presented by congenital hypertrophic pyloric stenosis for which we have a cure in the Fredet-Rammstedt operation, are in regard to early and correct diagnosis, the selection of the proper time for operation and adequate preoperative care.

The cause of the condition is unknown but the fact that it is present at birth (and probably before), that more than one case may occur in the same family, and that it is occasionally encountered in each of a pair of identical twins, is evidence of a genetic factor. The latter factor is not conclusive; some argue that multiple births produce a disturbance in growth and that therefore the hypertrophy of the pylorus may be due to environmental factors. The condition is found most frequently in first-born children, about one-half of all cases. The disease is one of early infancy and boys are affected four times as often as girl babies.

The diagnosis can be suspected from the history usually given by the parents. The baby, most often a boy, was vigorous at birth and nursed normally. About ten or twenty days later he began to regurgitate and later the vomiting became projectile. This persisted in spite of numerous changes in the food formulas after the baby was removed from the breast. The baby had a worried look, kept gnawing at his fists, lost weight, and became constipated. He or she appeared hungry in spite of the persistent vomiting.

The diagnosis is confirmed by physical examination with signs of loss of weight, dehydration, gastric distention with peristaltic waves of gastric origin and the demonstration of a pyloric tumor. The latter procedure may be difficult but with adequate study and proper technic can be done in most cases.

There is a difference of opinion as to whether x-ray studies should be made. Ladd<sup>1</sup> states that if the other signs are definite x-ray studies are not necessary or desirable. Cobb<sup>2</sup> believes, however, that the x-ray studies are useful in some cases to define the degree of obstruction and the amount of retention. Norris<sup>3</sup> states that they are essential if the vomiting begins immediately after birth in order to establish the presence or absence of duodenal atresia in which immediate operation is necessary. Most surgeons believe that barium in

the stomach adds to their difficulties at operation and attempts at removing it by gastric lavage place an undesired tax upon the strength of an already weakened child.

The two principal conditions which must be differentiated from obstruction due to hypertrophic pyloric stenosis are pylorospasm and congenital duodenal stenosis. The former is more gradual in its onset and less severe in its course. The response to sedatives or antispasmodics is prompt. Duodenal atresia can be differentiated by x-ray studies. The presence of bile in the vomitus also indicates duodenal atresia rather than pyloric stenosis.

The preoperative care is aimed at overcoming the dehydration and the starvation. Normal salt solution can be given by hypodermoclysis or intravenously, but most pediatricians prefer intraperitoneal injections. Glucose can be given intravenously or subcutaneously. The restoration of water balance before operation is essential and the general recognition of this fact explains in a large degree the success of the operation in later years. The postoperative care is largely concerned with preventing too rapid an increase in the diet. A food formula suited to the age of the patient should be given early and the results carefully watched until the child is back to a normal diet.

The results of the Fredet-Rammstedt operation have steadily improved and today it is the accepted treatment when the patient is in condition to stand the operation. Early diagnosis and adequate preoperative care have been a large factor in the better results. Thus Robertson<sup>4</sup> in an analysis of cases treated at the Toronto Hospital for Sick Children gives the following results:

Years	Treated by operation	Died	Mortality
1914-1923 incl. ....	81	19	24.4%
1924-1933 incl. ....	212	29	13.0%
1934-1939 incl. ....	109	4	3.6%
1914-1939 incl. ....	402	52	12.9%
Not operated upon.....	28	18	64.3%

Ladd in discussing Robertson's paper gave the following results as obtained in Boston Hospitals.

#### RESULTS OF 765 CASES OF PYLORIC STENOSIS

Years	Number of Cases	Deaths	Mortality
1915-1922 .....	125	15	10.4 %
1923-1928 .....	150	11	7.0 %
1929-1931 .....	151	3	2.0 %
1932-1935 .....	162	8	4.9 %
1936-1939 .....	177	1	0.56 %

These two analyses give ample evidence of the improvement which has taken place in the surgical treatment of the disease in the last twenty-five years.

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# STATE DEPARTMENT OF HEALTH

*Walter L. Bierring*

## Iowa Public Health Association In Fifteenth Annual Meeting

As announced in the April number of the JOURNAL, page 164, the fifteenth annual meeting of the Iowa Public Health Association will be held in Des Moines, at Hotel Fort Des Moines, May 8 and 9. A cordial invitation is extended physicians to attend this meeting. The tentative program, as arranged by the program committee\*, is as follows:

Registration—8:30 A. M.

**THURSDAY, MAY 8**

Opening Session—10:00 A. M.

Welcome—

HONORABLE MARK L. CONKLING, Mayor of Des Moines

Response—

HARRY E. RANSOM, M.D., Des Moines Health Commissioner

Dentistry and the Nation's Health—

JOHN C. BRAUER, D.D.S., Iowa City, Director, Bureau of Dental Hygiene, University of Iowa

Nutrition and Health—

DR. MABEL NELSON, Ames, Iowa State College

Practical Public Health—

HARRY S. MUSTARD, M.D., New York, De Lamar Institute of Public Health, Columbia University

Special Luncheon—12:15

Sponsored by the State Organization for Public Health Nursing

Afternoon Session—2:00 P. M.

Maintaining an Intact Local Health Service

Leader—

REGINALD M. ATWATER, M.D., New York, Executive Secretary, American Public Health Association

Discussion by seven persons representing various fields of public health.

\*Program Committee: Fern Goulding, R.N., Robert Hanlon, M.S., and R. M. Sorensen, M.D., Chairman.

ANNUAL DINNER—6:30 P. M.

Presiding—

A. H. WIETERS, M.S., Des Moines, Director, Division of Public Health Engineering, Iowa State Department of Health, and President of the Iowa Public Health Association.

Entertainment:

Introduction of Guests—

Greetings—

HONORABLE GEORGE A. WILSON, Governor of Iowa

Greetings from the Iowa State Department of Health—

WALTER L. BIERRING, M.D., State Health Commissioner

Address—

HARRY S. MUSTARD, M.D., New York

**FRIDAY, MAY 9**

Morning Session—9:30 A. M.

Presiding—

FERN GOULDING, R.N., Ames, First Vice President, Iowa Public Health Association

Report on Interstate Malaria Survey—

J. S. ROBERTSON, JR., Memphis, Tennessee, Sanitary Engineer, U. S. Public Health Service

Mental Health—

PEARL SHALIT, R.N., St. Paul, Director of Education, St. Paul Family Nursing Service

Modern Magic—

Motion Picture Film on Milk

Industrial Nursing—

LAVON BABB, R.N., St. Joseph, Missouri, Industrial Nurse, Quaker Oats Company

The Physician and Industrial Hygiene—

C. D. SELBY, M.D., Detroit, Medical Director, General Motors Corporation

Luncheon—12:30 P. M.

Presiding—

MR. A. H. WIETERS, President, Iowa Public Health Association

Address—

WALTER L. BIERRING, M.D., State Health Commissioner

Annual Business Meeting

Adjournment.

CANCER IN IOWA IN 1940

ERIC P. PFEIFFER, M.D., C.P.H., Director,  
Division of Vital Statistics  
Iowa State Department of Health

The cancer death rate in Iowa for 1940 was 136.95 per 100,000 persons. Further study reveals that the death rate in rural areas was 70 per cent greater than in urban areas (including cities over 10,000 population). Several questions arise as to why a person living in a rural area is apparently subjected to nearly twice as great a risk of dying of malignancy as that of his urban kin.

1. Is the urbanite more health conscious, leading to early diagnosis in more instances and to recognition of cancer prior to metastasis?

2. Is the rural dweller subjected to environmental or other conditions that are more conducive to malignancy?

3. Is the increased rate of cancer deaths in rural areas due in part to lack of adequate diagnostic facilities, including tumor clinics and pathologists, in these areas?

4. How large a part has the depression played in preventing people from seeking early diagnosis and medical care?

The accompanying table lists the counties and cities over 10,000 population in Iowa, together with the number of deaths from cancer, and death rates during 1940. A glance at the map of Iowa, which is based on rates presented in the table,

clearly indicates that the highest cancer mortality rate does not obtain in counties in which the larger urban centers are located.

According to Ludvig Hektoen, M.D., Executive Director, National Advisory Cancer Council, United States Public Health Service, Washington, D. C., there are for each death from cancer, two additional cases.

The State Department of Health is cooperating with the Women's Field Army and the Cancer Committee of the Iowa State Medical Society in the establishment of adequately equipped tumor clinics in various parts of the state. These clinics will not only provide proper facilities, but through decentralized locations, will aid in making such facilities more readily accessible both to physicians and to people living in the rural areas.

PREVALENCE OF DISEASE

Disease	Mar. '41	Feb. '41	Mar. '40	Most Cases Reported from
Diphtheria	18	33	12	Cass, Humboldt, Polk
Scarlet Fever	273	234	271	For the State
Typhoid Fever	2	1	5	Des Moines, Hamilton
Smallpox	14	15	44	Dubuque, Sioux
Measles	829	645	1074	Marshall, Dubuque, Jefferson, Appanoose, Black Hawk, Hamilton
Whooping Cough	226	133	37	Boone, Montgomery, Woodbury
Brucellosis	12	21	21	For the State
Chickenpox	548	481	190	For the State
German Measles	8	5	5	For the State
Influenza	618	1208	74	Woodbury, Polk, Mitchell, Muscatine
Mumps	1139	708	470	Woodbury, Black Hawk, Cedar, Scott
Pneumonia	239	301	305	For the State
Polio-myelitis	1	3	1	Johnson
Tuberculosis	75	4	27	For the State
Gonorrhea	97	115	99	For the State
Syphilis	209	184	267	For the State

CANCER (ALL FORMS) IN IOWA, 1940, EXCLUSIVE OF CITIES OVER 10,000

County	Total	Rate	Residents	Non-Residents	Allocation of Non-Residents	Total Residents	Rate
Adair	14	106.09	14	..	7	21	159.14
Adams	14	137.84	13	1	1	14	137.84
Allamakee	28	162.93	25	3	2	27	157.14
Appanoose	46	189.75	38	8	13	51	210.38
Audubon	13	110.26	13	..	4	17	144.19
Benton	20	87.42	17	3	6	23	100.53
Black Hawk	20	70.92	20	..	7	27	95.74
Boone	18	103.39	17	1	11	28	160.83
Bremer	31	172.88	28	3	3	31	172.88
Buchanan	22	104.79	14	8	5	19	90.52
Buena Vista	20	100.82	14	6	6	20	100.82
Butler	18	100.08	18	..	6	24	133.44
Calhoun	29	164.92	27	2	2	29	164.92
Carroll	25	109.80	16	9	6	22	96.62
Cass	17	91.17	15	2	7	22	117.99
Cedar	17	100.70	17	..	6	23	136.23
Cerro Gordo	13	77.56	12	1	5	17	101.42
Cherokee	28	145.40	19	9	2	21	109.05
Chickasaw	17	111.64	13	4	2	15	98.51
Clarke	16	156.51	11	5	4	15	146.58
Clay	20	112.60	15	5	8	23	129.49
Clayton	41	168.47	40	1	3	43	176.69
Clinton	19	102.98	18	1	10	28	151.76
Crawford	20	97.38	19	1	4	23	111.99
Dallas	33	133.88	28	5	8	36	158.94
Davis	13	116.74	11	2	3	14	125.92
Decatur	21	149.88	19	2	2	21	149.88
Delaware	20	108.18	18	2	5	23	124.41
Des Moines	7	63.79	7	..	5	12	109.37
Dickinson	19	155.93	18	1	5	23	188.76
Dubuque	19	114.61	19	..	8	27	135.84
Emmet	12	89.51	8	4	4	12	89.51



County	Total	Rate	Residents	Non-Residents	Allocation of Non-Residents	Total Residents	Rate
Fayette.....	35	120.50	34	1	6	40	137.20
Floyd.....	19	94.20	18	1	7	25	123.95
Franklin.....	26	158.73	22	4	3	25	152.63
Fremont.....	19	129.73	19	1	3	22	150.11
Greene.....	23	138.55	16	7	5	21	126.50
Grundy.....	12	88.76	11	1	4	15	110.97
Guthrie.....	19	110.41	17	2	3	20	116.22
Hamilton.....	19	95.38	15	4	2	17	85.34
Hancock.....	8	51.94	7	1	4	11	71.42
Hardin.....	29	128.73	26	3	6	32	142.05
Harrison.....	28	122.98	28	1	10	38	166.90
Henry.....	28	155.60	21	7	6	27	150.04
Howard.....	13	96.07	12	1	13	13	96.07
Humboldt.....	12	89.16	12	1	4	16	118.88
Ida.....	6	54.31	6	1	1	7	63.36
Iowa.....	23	135.17	23	1	6	29	170.43
Jackson.....	18	90.83	15	3	11	26	135.54
Jasper.....	17	80.82	16	1	6	22	104.59
Jefferson.....	25	158.60	18	7	4	22	139.57
Johnson.....	16	99.94	16	10	6	22	137.41
Jones.....	36	180.47	26	10	9	35	175.46
Keokuk.....	35	190.16	34	1	2	36	195.59
Kossuth.....	39	146.45	34	5	6	40	150.20
Lee.....	14	117.31	14	1	5	19	159.20
Linn.....	40	148.04	35	5	6	41	151.74
Louisa.....	6	52.70	6	1	7	13	114.19
Lucas.....	19	130.40	18	1	1	19	130.40
Lyon.....	15	97.56	14	1	1	14	91.06
Madison.....	14	96.39	12	2	4	16	110.16
Mahaska.....	9	58.21	9	1	2	11	71.15
Marion.....	35	129.85	29	6	11	40	148.04
Marshall.....	16	98.98	13	3	6	19	117.53
Mills.....	18	119.48	14	4	3	17	112.85
Mitchell.....	25	177.05	23	2	3	26	184.13
Monona.....	17	93.21	14	3	6	20	109.66
Monroe.....	26	178.66	22	4	6	28	192.39
Montgomery.....	24	152.90	22	2	3	25	159.28
Muscatine.....	15	115.29	14	1	5	19	146.03
O'Brien.....	16	82.93	16	1	1	16	82.93
Osceola.....	5	47.14	4	1	2	6	56.57
Page.....	36	144.61	26	10	5	31	124.56
Palo Alto.....	21	129.86	17	4	4	21	129.86
Plymouth.....	37	157.44	33	4	3	36	153.18
Pocahontas.....	15	92.22	14	1	5	19	116.81
Polk.....	23	63.87	19	4	14	33	91.64
Pottawattamie.....	20	79.00	19	1	10	29	114.55
Poweshiek.....	26	138.61	20	6	4	24	127.94
Ringgold.....	13	116.73	13	1	5	18	161.62
Sac.....	13	73.70	12	1	5	17	96.37
Scott.....	19	101.56	17	2	7	24	128.28
Shelby.....	17	101.68	15	2	1	16	95.70
Sioux.....	38	139.65	36	2	2	38	139.65
Story.....	30	143.70	27	3	5	32	153.28
Tama.....	24	107.02	23	1	7	30	133.77
Taylor.....	21	147.29	19	2	3	22	154.31
Union.....	31	190.43	28	3	8	36	221.15
Van Buren.....	24	199.13	24	1	1	25	207.42
Wapello.....	21	188.83	20	1	5	25	196.70
Warren.....	13	73.46	13	1	3	16	90.42
Washington.....	25	124.65	23	2	4	27	134.62
Wayne.....	14	105.36	13	1	1	14	105.36
Webster.....	11	59.08	11	1	7	18	96.68
Winnebago.....	18	128.83	14	4	2	16	114.51
Winneshek.....	29	130.27	25	4	8	33	148.24
Woodbury.....	14	65.84	11	3	4	15	70.51
Worth.....	5	43.67	5	1	1	6	52.40
Wright.....	34	169.66	30	4	8	38	189.66
Out of State.....	..	..	..	..	97	97	..
Rural.....	2081	143.17	1834	247	583	2417	166.29
Urban.....	1395	128.62	984	411	75	1059	97.64
State.....	3476	136.95	2818	658	658	3476	136.95

## CITIES OVER 10,000 POPULATION

County	Total	Rate	Residents	Non-Residents	Allocation of Non-Residents	Total Residents	Rate
Ames.....	17	135.41	15	2	1	16	127.44
Boone.....	22	177.81	20	2	2	22	177.81
Burlington.....	49	189.68	37	12	4	41	158.71
Cedar Rapids.....	91	146.51	77	14	10	87	140.07
Clinton.....	62	236.03	49	13	2	51	194.16
Council Bluffs.....	72	173.74	50	22	2	52	125.48
Davenport.....	106	160.48	91	15	3	94	142.32
Des Moines.....	273	170.90	194	79	10	204	127.70
Dubuque.....	76	173.13	58	18	7	65	148.07
Fort Dodge.....	38	165.91	23	15	5	28	122.25
Fort Madison.....	24	170.66	16	8	1	17	120.89
Iowa City.....	146	849.72	30	116	..	30	174.60
Keokuk.....	30	198.99	19	11	..	30	126.03
Marshalltown.....	46	239.11	35	11	7	42	218.32
Mason City.....	41	151.41	35	6	1	36	129.26
Muscatine.....	38	207.82	33	5	1	34	185.95
Newton.....	10	95.58	7	3	..	7	69.91
Oskaloosa.....	22	199.56	19	3	1	20	181.42
Ottumwa.....	47	148.90	40	7	4	44	139.39
Sioux City.....	119	144.47	89	30	9	98	118.97
Waterloo.....	66	127.58	47	19	5	52	100.52
Urban.....	1395	128.62	984	411	75	1059	97.64

## NEW SPOTTED FEVER VACCINE

### Source of Vaccine

Through courtesy of R. R. Parker, Ph.D., Director of the Rocky Mountain Laboratory of the United States Public Health Service at Hamilton, Montana, a supply of vaccine for active immunization against Rocky Mountain Spotted Fever has been forwarded to Ira Nelson, M.D., Superintendent of the Sac and Fox Sanatorium at Toledo. Immunization of children and adults at the Tama Indian Reservation will be administered by Dr. Nelson and Dr. A. A. Pace of Toledo. Prior to 1941, spotted fever vaccine was obtained from infected tissues of the Rocky Mountain wood tick, *Dermacentor andersoni*.

A new type of vaccine has been made available this year, prepared from the chick embryo by the yolk sac method of Cox. The method of preparation of the vaccine is described by Herold R. Cox, Associate Bacteriologist, Rocky Mountain Laboratory, in the issue of Public Health Reports for June 16, 1939. Following incubation of the egg for a period of five to ten days, a suspension containing the virus of Rocky Mountain spotted

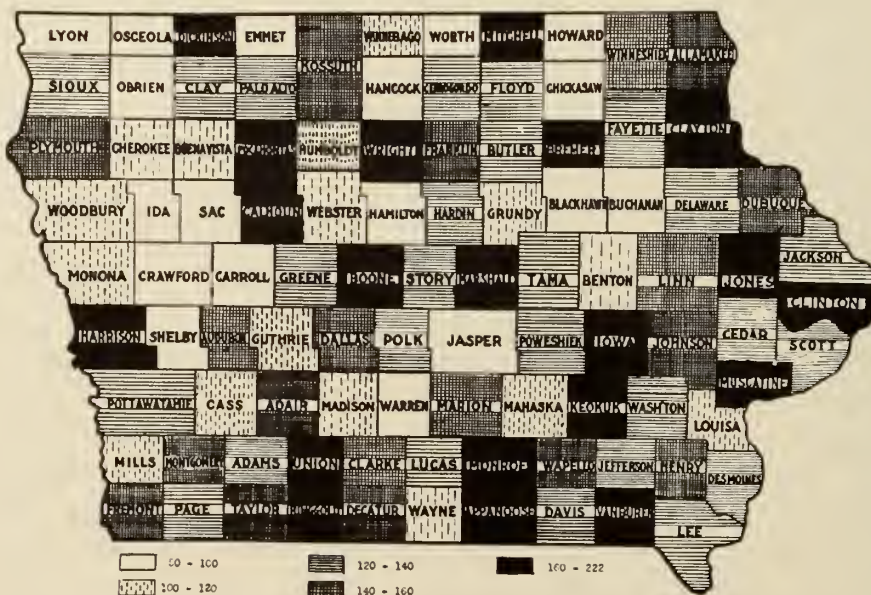
fever is inoculated into the egg yolk. Incubation of the inoculated egg is continued for a number of days; death of the embryo occurs in three or four days.

### Method of Preparation

The method of preparation of the vaccine as described by Cox is as follows:

"The embryonic tissues are completely removed aseptically from a number of eggs and washed once or twice with sterile saline to remove any yolk or other fluids that might be present. They are then drained free from excess moisture, pooled, weighed and ground with sterile alundum to a homogeneous suspension. Sterile saline is added to make a two or three per cent suspension. A portion of the suspension is reserved for titration and to the remainder is added phenol to 0.4 and formalin to 0.1 per cent concentration. The suspension is then stored at 2 degrees centigrade, and subjected to daily shaking for six or seven days. In twelve or fourteen days it is centrifuged at 2,500 to 3,000 revolutions per minute for twenty minutes. The supernatant fluid thus obtained is used as vaccine."

Death Rates From Cancer (All Forms) in Iowa in 1940





# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

LEE FORREST HILL, Editor.....Des Moines  
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## FRED MOORE

The JOURNAL records, with sadness, the death of Fred Moore. Elsewhere in this issue is published a fitting obituary prepared by Fred's lifelong friend, Dr. Walter Bierring. We are also reprinting an editorial which appeared in the Des Moines Tribune on April 9, the day following Dr. Moore's death. We reprint it because we and a number of Fred's friends felt it measured up to the occasion unusually well and should be preserved in our files. Each of these documents sets forth clearly the qualities and accomplishments which entitle Fred Moore's name to be placed high in the list of the nation's "great" physicians.

It is regrettable indeed that the career of one whose service to his community, to the state and to the nation had reached such a high plane of usefulness should have been cut off so untimely. His was not the life which had reached its zenith and was basking in the sunset glow of past accomplishments, however justified he might have been in assuming such a rôle. On the contrary his broad competent shoulders and keen mind were still faced in the direction of doing, of achieving and of grappling eagerly with the constant flow of new situations and new problems which were continuously being thrust upon him. What honors yet awaited him in the field of medicine, both state and national, had he been spared, we do not know; but we know they would have come to him and been richly deserved.

Yes, we shall miss you, Fred, in a great many ways. We shall miss you as the staunch dependable friend so many of us knew who never let one of us down. We shall miss your wise counsel and advice which was sought by us on so many occasions, and we shall always remember your capacity for examining minutely all sides of a prob-

lem before you committed yourself to an expression of opinion. We shall remember you too, as you exhibited this same trait at the bedside of a sick child—elbow on knee, chin in hand, quietly studying all the evidence as you reached your diagnostic conclusion.

We shall miss you keenly in the affairs of our county and state societies. Here at home, in your own community, we doubt if any major medical project had been launched in the last quarter of a century in which you did not take an active part, and more often than not, the chief active part. As chairman of our State Society's Legislative Committee for the last eight years you performed with distinction a most difficult and important task. We feel sure you will be missed in those larger fields of endeavor which you enjoyed so much—the House of Delegates of the American Medical Association and the Council on Medical Education and Hospitals.

While we shall miss you, Fred, and while we sorrow over the tragic suddenness with which you were taken from us, nevertheless, we cannot help but feel that we should be grateful for the years you were permitted to spend with us—years of service, years of devotion and fidelity to friends and family, and years of accomplishment such as few attain. If the measure of a successful life is to have lived long enough and well enough to leave the world a better place for having been in it, then surely yours was successful. In the years to come, we shall take up the torch where you put it down, and we shall try to carry it the higher and the clearer, remembering the example you have set for us.

## A NEW TEST FOR PREGNANCY

A skin test for the diagnosis of pregnancy has recently been reported by Falls, Freda and Cohen of the University of Illinois, College of Medicine. These authors first employed a protein extract from the placenta for use in skin testing for pregnancy. Tests with placental extract were positive in 75 per cent of the patients where pregnancy existed; however, the fact that false reactions occurred in 25 per cent of the cases precluded its use for diagnostic purposes.

With the failure of protein extract of the placenta these ingenious authors then used colostrum injected intradermally. Colostrum was collected from primiparas in the twenty-eighth week of pregnancy and diluted with an equal amount of normal saline solution; 1:100 merthiolate solution was added as a preservative. It was found that pregnant women gave a faint response or no reaction to the injection, but non-pregnant women reacted by the formation of a large weal with

pseudopodia surrounded by a red areola, which reached its height an hour after injection.

The test has been employed on 265 known pregnant women; 98 per cent gave no reaction. Of 113 non-pregnant females tested, 96 per cent gave a typical reaction with a weal and surrounding areola. One hundred male medical patients gave negative pregnancy reactions. A group of 45 male and female children from two to ten years of age gave a reaction similar to that seen in pregnancy; however, at puberty a non-pregnant reaction was elicited.

The explanation of the reaction is not entirely clear. It appears that non-pregnant individuals have become sensitized to some specific protein present in the colostrum of primiparous women. The reason the pregnant woman fails to react is attributed to the hypothesis that early in pregnancy the production and absorption of the active substance from the breast lead to an immune state which prevents the local reaction at the site of injection. It is interesting to note that neither human milk nor the colostrum or the milk of the cow gave specific reactions, indicating that these substances do not contain the specific protein which is present in the colostrum of primiparous women. It is believed that the reaction in males is due to the fact that over a period of years the male breast secretes a sufficient amount of the specific solution to induce sensitivity but not immunization. The negative reactions before puberty may be attributed to the fact that children have not yet produced enough of the specific protein to become sensitized to the injection of colostrum.

A simple skin test for the diagnosis of pregnancy which can be read an hour after the injection would undoubtedly be a valuable addition to our diagnostic armamentarium. The authors frankly state that although the test seems to have value as an aid in the diagnosis of pregnancy it is necessary for others to confirm their results before the real merit of the test can be determined. If the efficacy of the test is proved it will be much simpler, much quicker and more economical than the methods available at the present time.

#### THIS YEAR IT'S CLEVELAND

In Cleveland, Ohio, from June 2 to 6, some ten thousand physicians from all parts of the nation will assemble for the Ninety-second Annual Session of the American Medical Association. We have not seen the program as yet, but we assume it will be bigger and better than anything that has ever been prepared before.

Cleveland is an ideal city in which to hold the convention from many points of view. It has a large auditorium which can house the entire

meeting under one roof. Hotel facilities are excellent and adequate. Then there's Bob Feller. We looked up the schedule and thereby became "accessories before (or after?) the fact" for any Iowan who plays hookey from the meeting to steal down to the ball park. Cleveland will play New York on June 1 and 2, and Boston on June 3, 4 and 5, and it's a foregone conclusion Bob will be on the mound for one of the games. Thus, there is a double attraction for all Iowa physicians to go to Cleveland this year.

We hope the Iowa delegation will be large. No physician can attend this greatest of all meetings and not be stimulated and broadened by the experience. All that is newest and latest in medical discovery will be discussed from the lecture platform and shown in the scientific and commercial exhibits. It is no small task to direct such a meeting as this. Those responsible for arrangements, the speakers who will appear on the program and the exhibitors have labored for months to perfect their presentations for the benefit of the physicians of America. The success of their efforts is measured by the number who attend. Let's do our share, as Iowans, to help make the Ninety-second Annual Session of the American Medical Association successful beyond anything which has ever occurred.

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#### VERDICT FAVORS THE GOVERNMENT

For something like eight weeks the trial suit of the Federal Government against the American Medical Association, et al., on the charge of conspiring in restraint of trade, went on in Washington. On April 4 the jury returned a verdict of guilty on the part of the American Medical Association and the District of Columbia Medical Society, but exonerated all individuals. This verdict, therefore, establishes organized medicine as a trust and finds it guilty of violating the Sherman Anti-trust Act. The specific charges and the counter-contentions as summarized by Justice Proctor in his instructions to the jury clarify the issues.

"In substance it is alleged that the defendants conspired:

1. To restrain Group Health in its business of providing medical and hospital care to its members and their dependants on a risk-sharing prepayment basis;
2. To restrain doctors on the staff of Group Health in pursuit of their calling;
3. To restrain other doctors in the District of Columbia in the pursuit of their calling, and
4. To restrain the Washington hospitals in the business of operating such hospitals."



"On the other hand, the defendants insist there was no conspiracy; hence no conspirators; that there was no purpose or plan to restrain Group Health, the hospitals or doctors; that their acts were intended only to oppose Group Health by legitimate argument and persuasion; that no coercion was practiced or intended against the hospitals, and that the 'White List' and disciplinary proceedings against members of the District Society represented reasonable action taken by authority of their constitution and rules to protect the organization and its standards of medical practice. Therefore it is claimed, in behalf of the defendants, that if those actions did interfere with Group Health and its doctors the effect was but an incidental and indirect result of acts taken legally and in good faith for legitimate ends and therefore were not wrongful or illegal."

According to an editorial in the April 12 issue of the *Journal of the American Medical Association*, the attorneys for the American Medical Association and the District of Columbia Medical Society are undertaking at once legal procedures to set aside and appeal the verdict. Unless this move is successful it would appear that much of the influence of measures, such as the Principles of Medical Ethics which have operated in the past to create the present high standards of medical practice, will be discredited. This we believe would be a calamity.

#### IOWA'S PREMARITAL LAW

It is doubtful if there is anyone in Iowa who does not know that the Forty-ninth General Assembly passed the premarital bill, and that this bill provides for a physical examination to determine the presence or absence of syphilis in all applicants for a license to marry in the state. This is a good law and the legislators are to be commended for their wisdom. However, as the law begins to be put into operation some of its provisions may need a little clarification. We have, therefore, consulted the Division of Venereal Disease Control of the Iowa State Department of Health, which is the administering agency, and are indebted to its director, Dr. R. M. Sorensen for the following information.

All persons given a premarital examination will fall into one of three groups: those who do not have syphilis, those who have early syphilis or those who have late syphilis. Most of the difficulty will arise over the people who fall in the third group. The examining physician is asked to certify that these people are "not in a stage of that disease whereby it may become communicable". Some physicians feel that this is putting

them "on the spot" and doubt that they have the authority to make such a statement. It should be remembered that the examining physician is required only to certify as to his "opinion" in the matter. Moreover, Section 1 of the law states that the physician's opinion of communicability shall be "as nearly as can be determined by a thorough physical examination and such standard microscopic and serological tests as are necessary for the discovery of syphilis". Obviously, then, the intent of the law indicates that the physician, in reaching his conclusion, must take into consideration other factors than a single positive blood test. In most instances a proper evaluation of the patient's history, physical examination and serologic tests will permit the establishment of a reasonably accurate opinion as to whether or not the patient with a positive blood test has syphilis in a communicable form.

Another problem arises in the cases of women who have syphilis which under ordinary conditions would be non-communicable, but which changes its status and becomes communicable in the event that pregnancy occurs. The danger here, of course, is to the fetus. All that the physician is required to do under these circumstances is to warn the patient about the dangers of untreated syphilis during pregnancy, and to urge that she place herself under the care of her physician immediately if she becomes pregnant.

The law also makes certain specific provisions for unmarried women who have become pregnant, in order that children may be legitimized. If neither applicant has syphilis, as shown by the examination and the laboratory tests, the regular health certificate is used. However, if the pregnant woman applicant has syphilis the physician is required to fill out the special "affidavit of pregnancy" blank. The pregnancy affidavit is also required if the prospective groom has syphilis in a communicable form, even if the pregnant woman does not. Such a situation could happen if the male applicant became infected with syphilis subsequent to the time he was responsible for the pregnancy. In this case it would be impossible to give him a health certificate, even though one could be given to the woman, but by using the affidavit of pregnancy the parties could be married and the child legitimized.

These are perhaps the more important of the points about which confusion may arise. It should be remembered that all cases of previously unknown and unreported syphilis (and gonorrhea) found in connection with the premarital examination are to be reported in the regular manner to the Iowa State Department of Health. It seems fairly obvious that the effectiveness of this

law in the battle against syphilis will depend upon how well physicians observe its provisions. The JOURNAL is confident that in this, as in all other constructive measures for the public welfare, the physicians of Iowa can be depended upon to cooperate to the utmost of their abilities.

#### ACCOMPLISHMENTS OF THE FORTY-NINTH GENERAL ASSEMBLY IN RELATION TO THE MEDICAL PROFESSION

A detailed report of the accomplishments of the Forty-ninth General Assembly as they affected the medical profession has been sent to every member of the State Society, but the JOURNAL wishes to review them briefly so that a permanent record may be available.

The bill which probably had the strongest backing of many organizations was the premarital bill requiring a physical examination by a physician as a prerequisite to obtaining a marriage license. The Iowa bill as it finally passed is well worded and will avoid many of the difficulties encountered by other states with similar legislation which lack the good phrasing of our bill. The bill went into effect upon publication, and physicians are now having their first experiences with it.

Senate File No. 10 placed the Glenwood State School on the same basis as the state hospitals through a bill requiring that the superintendent be a physician with at least five years' experience in the actual practice of medicine.

A bill to raise the standards of optometrists was also among those which were enacted into law. This bill does not apply to doctors of medicine, but only to optometrists.

A bill which will benefit the non-profit hospital insurance companies of the state was passed; it will permit payroll deductions from wages of employees of public institutions so that they may join such group membership plans.

Four bills in which the medical profession was interested were defeated. The chiropractic bill remained in the Senate Sifting Committee; the pharmacy bill remained in the sifting committee of both Houses; the bill providing for immunization against contagious diseases in first term school children was defeated by a close vote in the House. This bill was introduced late in the session, and if it had been introduced earlier, it might possibly have received favorable consideration. The bill which provided for the taking of blood specimens from persons arrested for offenses involving intoxication while operating a motor vehicle was passed by the House, but remained in the Senate Sifting Committee. The medical profession was interested in this bill, but the phrasing of the bill proved difficult, and there

was a question about its constitutionality in the form in which it passed the House.

In the main, from the standpoint of legislation affecting public health, the results of the Forty-ninth General Assembly of Iowa are entirely satisfactory, and a major factor in obtaining these results was the generous assistance of the medical profession in acquainting legislators with necessary and pertinent information on the vital subject of health.

#### MEDICAL PREPAREDNESS\*

Last month your Committee on Medical Preparedness suggested that when the one physician in a community is called into service, it might be necessary for doctors in nearby communities to hold definite office hours in that community to render medical service to its inhabitants. Under a strict interpretation of the Iowa law, such physicians might possibly be classified as itinerants which would make them subject to a yearly license fee of \$250.00. The Committee felt that such a classification was unjust in the face of the emergency, and requested the Board of Medical Examiners to meet with it and discuss the problem.

Such a meeting was held in April, and both groups decided that when a physician or physicians are called into a community, with the approval of the county medical preparedness committee or the county medical society, for the legitimate practice of medicine, they shall not be construed as itinerants by the proper authorities during the absence of the physician who is called into military service. Rulings of the Board of Medical Examiners have the effect of laws, and therefore, physicians who serve two communities during the absence of a colleague from one of those communities will run no risk of being classified as itinerants as long as they have the approval of their county medical society.

Early in January the Committee furnished the war department with a list of physicians in Iowa who had been classified by their county societies as ones who should be exempt from military service. It now appears that this information should be submitted on blanks, county by county, with certain subdivisions and classifications observed. Each county society in Iowa has been sent these blanks and has been asked to furnish the information. To a degree this is a duplication of the original classification, but the Committee trusts that the physicians who are being asked for this information will see the value of a standard data form for each county in the United States, and the Committee earnestly solicits their cooperation in making the lists available.

\*From the Committee on Medical Preparedness.



# HOSPITAL SERVICE IN IOWA

## A Report of Progress

At the 1939 session of the General Assembly of the State of Iowa an "Act to authorize non-profit corporations to contract to furnish hospital service to subscribers and to contract with hospitals to furnish hospital service; to provide for the regulation and supervision thereof; to fix and declare their rights, powers and duties; to declare such corporation to be a charitable and benevolent institution; to prescribe the powers and duties of the Commissioner of Insurance with reference thereto" was passed. This act had been introduced in the assembly at the request of the Iowa Hospital Association. The Iowa State Medical Society's Committee on Public Policy and Legislation had been informed of the proposed legislation and was interested in seeing that the act when passed would meet the standards and the desires of the medical profession in the state of Iowa.

At the convention of the Iowa Hospital Association held in Cedar Rapids in 1939 the Board of Trustees of the Iowa Hospital Association was instructed by its members to proceed with the organization of a company to carry out the services outlined and permitted under the act passed by the Assembly. The Board of Trustees of the Iowa Hospital Association assumed this responsibility and invited representatives of the Iowa State Medical Society to sit with them in formulating the corporate set-up and contract provisions for subscribers and for hospitals. The representatives of the State Medical Society who met with the Board of Directors of the Iowa Hospital Association were Dr. Fred Moore, Dr. Martin I. Olsen, and Dr. E. E. Shaw. After several months of deliberation, Articles of Incorporation and By-Laws governing the operation of the company, Hospital Service, Incorporated, of Iowa, were adopted, approved by the Insurance Commissioner, and in September, 1939 filed in the County Recorder's office at Des Moines, Iowa. The incorporators of the company were the members of the Board of Trustees of the Iowa Hospital Association and Dr. Fred Moore, chairman of the Committee on Public Policy and Legislation of the Iowa State Medical Society, Dr. Martin I. Olsen, Medical Director, Central Life Assur-

ance Society of Des Moines, and Dr. Ernest E. Shaw, Chairman of the Medical Economics Committee of the Iowa State Medical Society. These incorporators also were the first Board of Directors of the company and served as such until the first meeting of the corporation in April, 1940.

The Articles of Incorporation and By-Laws provide that the corporate members of the company shall be of two classes: the one, hospital corporate members nominated by member hospitals; the other, medical society corporate members appointed by the State Medical Society equal in number to hospital corporate members. The hospital corporate members elect two-thirds of the members of the Board of Directors of the company of which five shall be hospital people and one shall not be a hospital person nor a member

of the medical profession. The Medical Society corporate members elect one third of the Board Members; two of them must be members of the State Medical Society and one must not be connected with a hospital and must not be a member of the medical profession. Thus the Iowa State Medical Society

always will be represented on the Board of Directors of Hospital Service, Incorporated, of Iowa. At the first annual meeting held in April, 1940 the Medical Society corporate members elected Dr. N. Boyd Anderson, secretary of the Polk County Medical Society and Dr. George M. Crabb, of the Park Hospital, Mason City, Iowa, as the Medical Society members and Charles W. Gifford, president of the Des Moines Railway Company, as the member of the Board not connected with a hospital nor a member of the medical profession.

The company was organized to provide hospital service, when needed, to people who join the plan. This hospital service may be provided in member hospitals or non-member hospitals. In member hospitals the contract provides for certain hospital services, such as operating room charges, dressings, casts and splints that are not limited and also some coverage for medicines and laboratory service. This is possible because these member hospitals contract with the plan to give this service to the subscribers when they are regularly

**Because the Iowa State Medical Society interested itself in securing passage of an enabling act in 1939 to permit a form of prepayment hospitalization plan for Iowa, we believe members will welcome the accompanying resumé of this service during 1940. Figures have been supplied by Mr. F. P. G. Lattner, director of Hospital Service, Incorporated, of Iowa.**

*—The Editor.*

admitted upon request of the attending physician. At the present time member hospitals in the plan are the following:

Atlantic  
Atlantic Hospital  
Belmond  
Belmond Hospital  
Boone  
Boone County Hospital  
Burlington  
Burlington Protestant Hospital  
Mercy Hospital  
St. Francis Hospital  
Cedar Falls  
Sartori Memorial Hospital  
Cedar Rapids  
Mercy Hospital  
St. Luke's Hospital  
Charles City  
Cedar Valley Hospital  
Clarinda  
Clarinda Municipal Hospital  
Clinton  
St. Joseph's Mercy Hospital  
Davenport  
Mercy Hospital  
St. Luke's Hospital  
Des Moines  
Iowa Lutheran Hospital  
Iowa Methodist Hospital  
Mercy Hospital  
Des Moines General Hospital  
Dubuque  
Finley Hospital  
St. Joseph's Mercy Hospital  
Estherville  
Coleman Hospital  
Forest City  
Irish Hospital  
Fort Madison  
Sacred Heart Hospital  
Iowa City  
Mercy Hospital  
Jefferson  
Greene County Hospital  
Keokuk  
Graham Protestant Hospital  
St. Joseph's Hospital  
Leon  
Decatur County Hospital  
Maquoketa  
City Memorial Hospital  
Marshalltown  
Evangelical Deaconess Hospital  
St. Thomas Mercy Hospital  
Mason City  
Park Hospital  
St. Joseph's Mercy Hospital  
McGregor  
McGregor Hospital  
Moline, Illinois  
Lutheran Hospital  
Moline Public Hospital  
Muscatine  
Bellevue Hospital  
Benjamin Hershey Memorial Hospital  
Nevada  
Iowa Sanitarium and Hospital  
New Hampton  
St. Joseph's Hospital  
Oelwein  
Mercy Hospital  
Rock Island, Illinois  
St. Anthony's Hospital  
Sigourney  
Sigourney Hospital  
Waterloo  
Allen Memorial Hospital  
St. Francis Hospital  
Waverly  
St. Joseph's Hospital

If the patient is not near a hospital and wishes to go to a non-member hospital the plan provides a certain flat sum per day allowance on the hospital bill regardless of the services rendered. However, coverage in non-member hospitals under this plan is not as complete as coverage in member hospitals.

At the end of 1940 enrollments in the plan numbered 16,792. Groups of doctors were enrolled at the end of 1940 in Des Moines, Mason City, Dubuque, Cedar Rapids, Burlington, Clarinda and Waverly.

#### NET ENROLLMENT BY MONTHS

	CONTRACTS		PERSONS COVERED		
	Individuals	Family	Males	Females	Total
January .....	190	47	108	224	332
February .....	341	250	469	595	1,064
March .....	316	248	427	621	1,048
April .....	163	239	464	440	904
May .....	136	180	307	395	702
June .....	358	417	869	870	1,739
July .....	355	336	599	761	1,360
August .....	170	233	462	452	914
September .....	450	734	1,419	1,395	2,814
October .....	264	323	562	673	1,235
November .....	529	662	1,132	1,405	2,537
December .....	668	500	923	1,220	2,143
Total .....	3,940	4,169	7,741	9,051	16,792

#### ENROLLMENT BY COMMUNITIES

CITY	CONTRACTS		PERSONS COVERED
	Individual	Family	
Atlantic .....	18	19	67
Burlington .....	370	405	1,615
Cedar Rapids .....	303	321	1,296
Charles City .....	16	12	49
Clarinda .....	179	241	927
Des Moines .....	1,170	1,301	5,173
Dubuque .....	471	445	1,841
Iowa City .....	22	7	42
Keokuk .....	13	4	26
Marshalltown .....	354	454	1,751
Mason City .....	335	322	1,331
Muscatine .....	33	21	101
Waverly .....	125	137	551
Davenport, Rock Island, Mo- line and East Moline.....	512	428	1,831
Miscellaneous .....	19	52	191
Total .....	3,940	4,169	16,792

In this first year of operation 750 patients applied for admission to the hospital and had their cases approved for coverage within the limits of the contract. The bills of 625 of these patients who were discharged during the year were paid. This amounted to \$18,771.11. Statistics as to the usage and types of people requiring this hospital care are outlined below.

#### TYPES OF CASES

	Accident	Medical	Surgical	Total
Single Males .....	4	45	27	76
Single Females .....	10	102	43	155
Married Males .....	8	38	30	76
Married Females .....	8	72	78	158
Male Children .....	7	37	36	80
Female Children .....	4	34	42	80
Total .....	41	328	256	625

#### TYPES OF HOSPITAL ACCOMMODATIONS USED

	Private Room	2 Beds in Room	3 or 4 Beds in Room	5 or More Beds in Room	Out-Patient Cases
Single Males .....	46	17	8	1	4
Single Females .....	111	28	11	5	0
Married Males .....	56	15	3	0	2
Married Females .....	100	39	15	2	2
Male Children .....	31	13	9	22	5
Female Children .....	22	18	8	30	2
Total .....	366	130	54	60	15

#### EXPERIENCE AS RELATED TO EXPOSURE

	Number of Cases	Member Years	Member Year	Total Days Used	Cases per Member Year	Amount Allowed
Single Males .....	76	601.3	.126	447	.743	2,617.56
Single Females .....	155	1,196.5	.129	1,024	.856	5,298.10
Married Females .....	158	1,720.8	.091	1,329	.772	5,901.96
Married Males .....	76	1,717.4	.044	637	.371	2,993.76
Male Children .....	80	1,005.7	.079	341	.339	1,572.34
Female Children .....	80	1,010.3	.079	332	.328	1,649.68



## NUMBER OF CASES BY AGE GROUPS

	Under 10 years	11-20 years	21-30 years	31-40 years	41-50 years	51-60 years	61-70 years	71-80 years
Single Males	0	3	28	16	14	7	6	2
Single Females	0	3	67	37	19	19	9	1
Married Males	0	0	10	31	14	13	6	2
Married Females	0	2	51	52	28	17	8	0
Male Children	49	31						
Female Children	64	16						

## NUMBER OF HOSPITAL DAYS USED BY AGE GROUPS

	Under 10 years	11-20 years	21-30 years	31-40 years	41-50 years	51-60 years	61-70 years	71-80 years
Single Males	0	20	132	93	118	24	39	21
Single Females	0	16	335	177	149	150	176	1
Married Males	0	0	34	236	85	196	73	13
Married Females	0	8	434	386	295	145	61	0
Male Children	221	120						
Female Children	286	46						

A few important observations may be made on the above tables. It will be noted that the majority of cases admitted were medical cases, and that, in proportion to their membership, single men used the hospital three times as often as married men and their stay was about twice as long. It is also interesting to note that the combined hospital care given to all family members, did not exceed the combined care for single males and single females. This shows that our rate structure of seventy-five cents a month for the individual and \$1.50 a month for the family is actuarially sound as well as being socially right. A rather large majority used private room accommodations. No doubt many of these patients would have been hospitalized in semi-private or ward accommodations if they had not had the plan to take care of most of the bill for them.

We are all interested in the financial operation of the company. We are setting below the balance sheet with an explanation of the various items.

## BALANCE SHEET

CASH:		ASSETS	
On Hand (This is the petty cash fund kept in the office of this company.)	\$ 25.00		
In Banks (This is money deposited in 28 banks in 12 cities where we have groups enrolled. These local banks are a convenience for local groups in making their payments and we feel that money from their local people can well be left with them since this is a community project.)	16,135.13		\$16,160.13
Subscribers' Payments Receivable (This represents payments due from subscribers to the plan; no part of it was over fifteen days past due and all of it has been paid in 1941.)			154.00
Hospital Contributions Available (This represents amounts which non-governmental member hospitals have agreed to pay to us as a contribution loan which will not carry interest and will be repaid only when authorized by the Board of Directors. This is money that may be called by the Board of Directors when they see fit.)			2,118.00
Furniture and Equipment (Including items purchased but not yet paid for.)	1,266.73		
Less—Reserve for depreciation.	63.33		
			1,203.40
Unexpired Insurance (This is the amount paid in advance for premiums on fidelity bonds for our employees)			75.00
<b>TOTAL ASSETS</b>			<b>\$19,710.53</b>

## LIABILITIES AND SURPLUS

Accounts Payable:	
Hospital Charges—	
Discharged Patients (This represents the amount due hospitals for patients discharged from the hospital prior to midnight December 31, 1940)	\$2,552.69
Undischarged Patients (This represents the actual amount due up to the end of the year for patients still in the hospital at the end of the year)	2,272.38
	<b>\$4,825.07</b>

Furniture and Equipment (Items purchased but for which payment had not been made at the end of the year.)	317.36	
Supplies and Expenses (Items purchased but for which payment had not been made at the end of the year.)	324.02	\$ 5,466.45
<b>Accruals:</b>		
Unemployment Insurance Pay Roll Taxes.	\$ 405.47	
Old Age Benefit Pay Roll Taxes.	305.76	
Interest (This represents interest due on these pay roll taxes which had not been paid when due because we were awaiting an opinion as to whether there was a liability to pay them. We were advised in December, 1940, that we were liable for payment.)	6.69	717.92
<b>Reserves:</b>		
Unearned Subscribers' Payments (Subscribers make their payments to us when due for different periods, most monthly, some quarterly, some semi-annually, some annually. Each month we compute the amount paid for protection for future months and set this up as a reserve for liabilities that may arise on those contracts in those future months. One-half of all current monthly payments are included in this account)	\$ 8,836.92	
Contingencies and Undetermined Hospital Charges (The Board of Directors voted to set aside a fixed percentage of all earned income from subscribers to the plan for a reserve to care for any contingency that might arise and for any undetermined and unpredictable liabilities. This is the amount that has been so set aside—an added protection for our subscribers.)	2,165.20	\$11,002.12
Unappropriated Surplus (This is the difference between the assets listed and the amounts due for hospital cases, other accounts payable, and reserves as set out above.)	2,524.04	
<b>TOTAL LIABILITIES AND SURPLUS</b>		<b>\$19,710.53</b>

The plan in its first year of operation used contributed capital furnished by their member hospitals to care for extra expense at the start of operations. However, in the last six months of the calendar year of 1940 and for the first three months of 1941 earnings have exceeded expenses and a reserve is being built up.

The medical profession has been very helpful, especially when members are familiar with the plan, its purposes and an appreciation of the problems of the medical practitioner. As noted above many doctors together with members of their families have enrolled in the plan. We know of cases in which because of the recommendation of a doctor an employer has made the service available to his employees. We have had many doctors express to us their appreciation of the value of the service for patients of theirs who have gone to the hospital and have had all, or the large part, of their bill taken care of by the plan.

Some of the counties and hospitals in the north and west part of the state are enrolled under a similar plan, called the Associated Hospitals Service, Incorporated. The territory covered by this organization includes the following counties: Audubon, Buena Vista, Calhoun, Carroll, Cherokee, Clay, Crawford, Dickinson, Emmet, Harrison, Humboldt, Ida, Kossuth, Lyon, Mills, Monona, O'Brien, Osceola, Palo Alto, Plymouth, Pocahontas, Pottawattamie, Sac, Shelby, Sioux, Webster and Woodbury. Participating hospitals are:

Alta  
Alta Hospital  
Carroll  
St. Anthony's Hospital  
Cherokee  
Sioux Valley Hospital  
Council Bluffs  
Mercy Hospital  
Jennie Edmundson Hospital  
Fort Dodge  
Lutheran Hospital  
St. Joseph's Hospital  
Hull  
Hull Hospital  
Ida Grove  
Ida Grove General Hospital  
LeMars  
Sacred Heart Hospital  
Onawa  
Onawa Hospital  
Rock Rapids  
VanderWilt Hospital  
Sheldon  
Good Samaritan Hospital  
Sibley  
Osceola Hospital  
Schoon Hospital  
Sioux City  
Lutheran Hospital  
Methodist Hospital  
St. Joseph's Hospital  
St. Vincent's Hospital  
Spirit Lake  
Clinic Hospital  
Storm Lake  
Porath Hospital

The total enrollment in Associated Hospital Service, Incorporated, of Sioux City, as of April 1, 1941, was 9,494 persons; 5,173 applications from individuals and families have been received. This figure includes 370 groups, comprising the majority of the large industrial firms in Sioux City and Fort Dodge. Services have been rendered as follows:

	Claims	Services
Claims paid .....	715	\$25,484.35
Claims rejected .....	12	
Claims pending .....	103	3,426.50*
Total .....	830	\$28,910.85

#### SUBSCRIPTION FEE

	Annually	Semi-Annually	Quarterly	Monthly
Individual .....	\$ 9.00	\$ 4.50	\$2.25	\$0.75
Subscriber and one dependent .....	18.00	9.00	4.50	1.50
Husband, wife and all unmarried children under eighteen years .....	21.00	10.50	5.25	1.75

#### SCHEDULE OF HOSPITAL PAYMENTS

\$10.00 for one-day stay.  
\$14.00 for two-day stay.  
\$17.50 for three-day stay.  
\$21.00 for four-day stay.  
\$25.00 for five-day stay.

Flat rate \$5.00 per day for six days and up, plus anesthetic up to \$10.00 for each administration.

\*Will be paid in April.

#### FINANCIAL CONDITION

Assets:	
Cash in Bank and Office.....	\$12,690.12
U. S. Savings Bonds (C. V.).....	4,081.00
Furniture and Fixtures (20% depreciation deducted) .....	630.00
Total .....	\$17,401.12
Liabilities:	
Reserved for unearned premiums.....	\$ 4,850.00
Reserved for claims pending.....	3,426.50
Reserved for bills and Social Security tax .....	271.00
Reserved for emergency (surplus).....	8,853.62
Total .....	\$17,401.12

#### MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

##### Meeting of the Board of Trustees March 25, 1941

The Board of Trustees of the Iowa State Medical Society met in the central office Tuesday evening, March 25, 1941, at 8:00 p. m. Those present were O. J. Fay, John I. Marker and Lee R. Woodward. Bills were authorized, and the minutes of the two previous meetings were read and approved; the editor was authorized to experiment with interspersing reading material with advertisements; details of the annual meeting were discussed and certain authorizations made; and expenses for attending the American Medical Association meeting were authorized for the three delegates, the secretary and executive secretary. Meeting adjourned at 10:00 p. m.

##### Meeting of the Committee on Industrial Health March 30, 1941

The Committee on Industrial Health met at the Hotel Fort Des Moines in Des Moines Sunday, March 30, 1941, at 11:00 a. m. Those present were J. E. Reeder, M.D., of Sioux City, C. H. Cretzmeyer, M.D., of Algona, James G. Macrae, M.D., of Creston, committee members; R. L. Parker, M.D., secretary, Walter L. Bierring, M.D., and R. M. Sorensen, M.D., of the State Department of Health; J. M. Cowan, M.D., of Sioux City, and Mr. A. H. Wieters and Mr. Paul Houser of the State Department of Health.

The committee discussed the problem of industrial health in Iowa, the different phases to be considered in any program of industrial health, and the value of a program of this nature. It was voted to recommend that all employers, according to size, have either a full-time physician, or appoint one or two competent physicians to examine all employees and care for industrial injuries, these physicians to be responsible for the health of such employees relative to working conditions. The industrial physician should not compete with the family physician, but should limit his extramural practice to such cases as the workmen's compensation and occupational disease laws require of him. The committee also approved in a general way the activities of the State Department of Health in industrial surveys it has made to date. The meeting adjourned at 12:40 p. m.



## SPEAKERS BUREAU ACTIVITIES

### MARSHALL COUNTY POSTGRADUATE MEDICAL COURSE

The Marshall County Medical Society will hold its May postgraduate medical lecture Tuesday, May 6, at 6:00 p. m., at Hotel Tallcorn in Marshalltown. Dr. Gilbert J. Thomas, Clinical Associate Professor of Urology at the University of Minnesota Medical School, will speak on Diseases of the Kidney. All physicians in the surrounding counties are invited to be present for this interesting and worthwhile lecture.

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### SPIRIT LAKE POSTGRADUATE MEDICAL COURSE

Dr. Lawrence E. Pierson of Sioux City will be the guest speaker at the May meeting of the postgraduate medical course in Spirit Lake. Dr. Pierson will speak on Urology in General Practice. Dr. F. L. R. Roberts, program chairman, invites the physicians in that vicinity to attend this meeting, which will be held in the Antlers Hotel Tuesday, May 20, at 6:30 p. m.

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### BOONE-STORY POSTGRADUATE MEDICAL COURSE

The May meeting of the Boone and Story County Medical Societies will be held in Boone at the Holst Hotel Thursday, May 29, at 6:30 p. m. Dr. Hugh McCulloch of the Washington University School of Medicine in St. Louis will be the guest speaker at this meeting and will discuss Rheumatic Heart Disease.

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### TAMA COUNTY POSTGRADUATE MEDICAL LECTURES

The Tama County Medical Society, in cooperation with the Speakers Bureau, opened a series of postgraduate medical lectures in Gladbrook Thursday, April 24, at which time Dr. Donovan F. Ward of Dubuque spoke on Control of Cancer. The next lecture is scheduled for Thursday, June 26, and at that time Dr. Daniel J. Glomset of Des Moines will discuss The Management of Acute Cardiac Failure. The physicians in that locality are urged to keep the date in mind and plan to be present for this interesting lecture.

### POWESHIEK COUNTY POSTGRADUATE MEDICAL COURSE

The Poweshiek County Medical Society has arranged a series of weekly postgraduate medical lectures for the month of October. The schedule as arranged by the Speakers Bureau is as follows:

- October 7 Urologic Diseases, Abraham G. Fleischman, M.D., Des Moines
- October 14 Common Obstetric Abnormalities and Their Treatment, Everett D. Plass, M.D., Iowa City
- October 21 Management of Fractures of The Lower Extremity, Verl A. Ruth, M.D., Des Moines
- October 28 Upper Respiratory Infections in Children, James E. Dyson, M.D., Des Moines

Dr. C. E. Harris of Grinnell, program chairman, asks that the physicians in the surrounding counties keep the dates in mind and attend these meetings.

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### JASPER COUNTY MEDICAL SOCIETY

The Jasper County Medical Society has requested the Speakers Bureau to arrange a series of weekly postgraduate medical lectures for the month of November. The topics and speakers have not been selected for the course as yet, but the completed program will be carried in an early issue of the JOURNAL. The lectures will begin the Tuesday following that of the last meeting on the Poweshiek County course, and it is hoped the physicians in both counties will attend the meetings in Grinnell during October and those in Newton during November. This arrangement affords an excellent opportunity for these men to secure a wide variety of scientific information.

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### RADIO SCHEDULE

WSUI—Tuesdays at 1:30 p. m.

WOI—Wednesdays at 2:05 p. m.

- May 6-7 Preparation and Use of Human Serum, Eugene C. Wagner, M.D.
- May 13-14 Dangers in The Indiscriminate Use of Drugs, Wm. B. Chase, Jr., M.D.
- May 20-21 Allergy, Herman J. Smith, M.D.
- May 27-28 Blood Banks, Elmer L. DeGowin, M.D.

# WOMAN'S AUXILIARY NEWS

**MRS. H. I. MCPHERRIN**, *Chairman of Press and Publicity Committee*  
5822 North Waterbury Road, Des Moines

*President*—**MRS. ELBERT T. WARREN**, Stuart

*President Elect*—**MRS. W. R. HORNADAY**, Des Moines

*Secretary*—**MRS. FRED MOORE**, Des Moines

*Treasurer*—**MRS. JAY C. DECKER**, 722 Thirty-sixth Street, Sioux City

## PROGRAM OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

Registration of members and guests at the annual meeting of the Woman's Auxiliary to the American Medical Association will begin Sunday, June 1, at 11:00 a. m., at the Hotel Carter in Cleveland. A tea will be held from 5:00 to 7:00 p. m. at the Women's City Club in honor of Mrs. V. E. Holcombe, national president.

The national board meeting will be held Monday, June 2, 9:00 a. m., at the Hotel Carter, and the afternoon will be spent sight-seeing on the west side of Cleveland. Dinner at the Union Club in honor of the national board will be at 7:30 p. m.

The formal opening of the convention will take place Tuesday, June 3, in the ballroom, Hotel Carter, at 9:00 a. m., and the following program has been arranged for the members and guests:

- 12:30 p. m. Luncheon, Hotel Carter, in honor of past presidents
- 2:00 p. m. Conferences of presidents and chairmen of committees of the state auxiliaries, Hotel Carter
- 3:00 p. m. Tea and tour of Cleveland Health Museum
- 8:00 p. m. Opening general meeting of the American Medical Association, Cleveland Public Auditorium

### Wednesday, June 4

- 9:00 a. m. General session of the Auxiliary, Hotel Carter
- 12:30 p. m. Luncheon, Hotel Carter
- 3:00 p. m. Visit to the Cleveland Cultural Center in Wade Park
- 5:30 p. m. Busses leave Art Museum for Hotel Carter
- 8:30 p. m. Reception and Musical, Allen Memorial Library

### Thursday, June 5

- 9:00 a. m. Golf Tournament at the Country Club
- 9:30 a. m. Postconvention meeting of National Board, Hotel Carter
- 12:30 p. m. Luncheon and style show, Country Club
- 6:30 p. m. Annual dinner for members, husbands and guests, Hotel Carter
- 9:00 p. m. Reception and ball in honor of the president of the American Medical Association

Shopping and inspection tours under the direction of the Hospitality Committee will be conducted on Friday, June 6, with luncheon at Higbee's Lounge, Terminal Building Group. The speaker on this occasion will be Mrs. Louis Heller, Jr., on "Flower Arrangements." Exhibits will be on display throughout the week in the Aviation Room at the Hotel Carter.

## THE HEALTH ESSAY CONTEST

Results of the 1941 Health Essay Contest sponsored by the Woman's Auxiliary and the Speakers Bureau of the Iowa State Medical Society have been announced as follows: First place, Ruthe Whitworth of Dallas Center; second place, Donald Patterson of Guthrie Center; and third place, Betty Strait of Viola. Honorable mention was given the following boys and girls who also submitted excellent essays: Lois Smith of Sioux Rapids, Joseph Ortmann of Remsen, Rose Ellen O'Neil of Council Bluffs; Wilma Kiewiet of Grundy Center, Marjorie Nossman of De Soto, Maxine Winder of Waterloo, Nellie Johnson of Odebolt, Dorothy Kurtzwell of Perry, Marjorie Kabrick of Des Moines, Mildred Royer of Argyle, and Cecile Bardsley of Council Bluffs.

Final judges of the contest were Miss Jessie Parker of Des Moines, State Department of Public Instruction; Dr. Walter L. Bierring of Des Moines, State Health Commissioner; Dr. Joseph B. Priestley of Des Moines, Chairman of the Speakers Bureau; and Mrs. E. T. Warren of Stuart and Mrs. W. A. Seidler of Jamaica, from the Woman's Auxiliary.

Almost two hundred essays were submitted in this year's contest, 142 from girls and 55 from boys; 74 schools in 38 counties were represented. The Committee feels that the project was especially successful and that the quality of essays submitted improves each year.

Mrs. W. A. Seidler, Chairman

## MAY STUDY PROGRAM

### CHILD WELFARE AND MATERNAL HEALTH

#### Project Suggestions—Which Will You Choose?

- I. Perfecting the Newborn Prenatally
  - A. The expectant mother's obligation
  - B. Preventing potential disease
  - C. Prenatal nutrition
  - D. Maternal hygiene



## References

- Angelo Patri: "Talks to Mothers"  
 State Board of Health: Congenital Syphilis Bulletins  
 I. Newton Kugelmass: "Growing Superior Children," Chapter I  
 Louise Zabriskie, R.N.: "Mother and Baby Care in Pictures"  
 II. The Infant  
 A. Nutrition  
 B. Infectious diseases  
 C. Immunization  
 D. Health habits

## References

- L. Emmet Holt: "Diseases of Infancy and Childhood"  
 L. Emmet Holt: "Food, Health and Growth"  
 C. A. and Mary W. Aldrich: "Babies Are Human Beings"  
 I. Newton Kugelmass: "Growing Superior Children," Chapter IV  
 III. The Young Child  
 A. Physical development  
 B. Mental development  
 C. Preventing pitfalls  
 D. Emotional growth

## References

- S. J. Baker: "The Growing Child"  
 W. P. Lucas: "The Health of the Runabout Child"  
 H. C. Cameron: "The Nervous Child" (The book applies to the normal child and describes nervous behavior resulting from wrong treatment)  
 Max and Grete Sebam: "The Tired Child" (Complete and careful study of the causes and remedies for this all too frequent abnormal state)  
 G. S. Walsh and G. A. Foote: "Safeguarding Children's Nerves"  
 Winifred Rand, Mary E. Sweeney, E. Vincent Lee: "Growth and Development of the Young Child"  
*Hygeia*, March, 1936: "The Tired Child", page 217  
 IV. The Youth  
 A. Physical development  
 B. Social attitudes  
 C. Fatigue  
 D. Recreation

## References for A

- I. Newton Kugelmass: "Growing Superior Children, Chapters XIII to XVI"  
 Oxford Medicine, Christian, Volume II  
 Williams: "Adolescence"  
 Schwab and Veider: "The Adolescent"  
*Hygeia*, January 1939, page 19: "4-H Builds Health"  
*Hygeia*, September 1938, page 832: "Bodily Changes"  
*Hygeia*, October 1938: "Bodily Changes, Part II"

## References for B

- Leta S. Hollingsworth: "The Psychology of the Adolescent"

*Hygeia*, September 1940, page 766: "Your Son at 17", Poponoe

*Hygeia*, April 1938, page 343: "Guiding Adolescence"

*Hygeia*, September 1939: "How to Manage the Adolescent"

*Hygeia*, January 1936: "Puberty in Fact and Fantasy"

## References for C

International Clinics, Volume III, page 191, Max Sebam, M.D.: "Non-organic Chronic Fatigue in the Child"

International Clinics, Volume II, page 105: "Fatigue and Nervousness in Childhood"

American Journal of Nursing, Volume 33, page 835: "Fatigue; Public Enemy Number One"

Canadian Medical Association Journal, April 1938, page 339; "The Fatigue Syndrome," G. K. Wharton  
 West Virginia Medical Journal, December 1932, page 542: "Fatigue in School Children," J. T. Thornton, M.D.

## References for D

Scouting Handbooks (Boys and girls)

Camp Fire Handbooks

Summer Camps

4-H Health and Skill Program

"The Hygiene of Physical Education Activities" from the Journal-Lancet, February 15, 1935, page 110  
 West Virginia Medical Journal, February 1939, page 89: "The Effects of Basketball on Junior High Boys," A. B. Bowyer, M.D.

*Hygeia*, October 1933, page 904: "Safeguarding the Athlete"

*Hygeia*, January 1934, page 57: "Training for Athletics and Health"

*Hygeia*, April 1934, page 344: "Training for Athletics and Health"

*Hygeia*, September 1935, page 835: "Is Basketball a Girls' Game?"

*Hygeia*, September 1937, page 987: "Clean Sports"

In addition to the above outlines and bibliographies the Committee suggests you refer to your local doctors' libraries for recent publications of pediatrics and maternal health. The above references are available at the state medical library.

Mrs. James E. Dyson

## THE NATIONAL BULLETIN

Plan to subscribe for the *National Bulletin*. Subscriptions will be taken at the state meeting.

Mrs. Roscoe E. Mosiman, national president-elect, in her article on "The Educational Value of the Woman's Auxiliary," in the winter issue, discusses the following specific questions:

1. Organization as a factor in human society.
2. The scope and influence of women's organizations.

3. The need of education along these lines.

4. The position of the Woman's Auxiliary with regard to these needs.

In this article she says, "There is a need as never before for an enlightened public opinion on all social and political issues which confront democracy today. Self-interest should be translated in terms of public interest. The benevolent impulse of the woman's movement in social reform should not be directed toward bringing about the opposite of the result desired.

"Women's clubs are devoting a substantial part of their programs to the study of current social problems of which those relating to health are of major importance. Some of these bodies have promoted activities concerned with the prevention of disease. Others have sponsored surveys to determine the health needs of their communities, while others have passed resolutions endorsing a federal health program which if considered by Congress might result in the socialization of medical service. The Woman's Auxiliary to the American Medical Association has a definite and important place in the women's club movement. It is the only women's organization directly concerned with health. It is the only women's organization equipped to give authoritative information to its members."

This article and others by the national chairman and the reports of the state presidents as well as those by our national president and the officers of the American Medical Association make this *Bulletin* an indispensable fund of information for Auxiliary members.

Mrs. T. B. Throckmorton, Chairman

### THE ONLY CHILD

MRS. HENRY G. DECKER, Des Moines

Dr. G. Stanley Hall says, "Being an only child is a disease in itself." That the only child is more likely to present a special problem than the child of a larger family is quite generally accepted by psychologists. It is a popular belief that only children are of two types; either they are spoiled, egotistical, domineering, anti-social and unpopular with others, or they are sensitive and nervous and wholly dependent upon their parents.

Various writers have pointed out two main hazards; first, that the only child may not have much association with others his age; and second, that he may receive an excessive amount of attention from his parents.<sup>1</sup> Richardson says, "The only child is one of exceptional emotional strain and stress; his problems are entirely distinct from those of children who are subjected to wholesome contact with their brothers and sisters and his handling constitutes a subject that merits the most careful and painstaking consideration."

The emotional development of the only child is of primary importance. Brill<sup>2</sup> writes that both parents may turn to the child to fill their own emotional needs especially if they have not found real happiness in marriage. They would thus demand from the child

an equal strength of emotional return which is not natural to an immature individual.

Interference by the parents in everything the only child does is very common. They desire to have him do things so perfectly and to act in such a correct manner that they constantly exert their authority to make them conform. Parents of this type are usually either very efficient or are failures who want their one child to realize all of their own unfulfilled ambitions. Whether the response from the child will be submission or loss of initiative or aggressive opposition depends on the personality make-up.<sup>3</sup>

Attempts have been made to show that the eldest and youngest children are more prone to maladjustment than children in other positions in the family series. Levey writes that eldest children are slightly more liable to suffer generally, while only children are more likely to be victims of parental over-solicitude and ambition.<sup>4</sup>

The results of a study of one hundred only children living at home with both parents, referred to a Child Guidance Clinic in New York, have been published by Anne Ward as follows:

"It was first found that only children are notably younger than clinic children as a whole. The possible reasons for this were that the parents would be over-concerned and so refer them earlier; that the parents were of a more intelligent type and would recognize difficulties sooner; and that only children tended to adjust as they got older and so were not referred. The only-child group also ranked higher in intelligence than the total clinic group. This was explained by the children coming from superior homes, having older parents, and being stimulated by constant adult association.

"The problem behavior shown by the only children was very similar to that of all the clinic children living at home with both parents except in the manifestation of stealing, lying and truancy. The smaller frequency of these three problems among the only children could not be explained wholly on the basis of age differences but was thought to be due to their living in a more sheltered environment where their wants were usually over-supplied and their contacts limited. When compared with a control group of three-child families, the only children showed a higher percentage of restlessness, overactivity, crying, nail-biting and school difficulties.

"Adverse factors affecting the study group were not thought to be more numerous than those under which other children lived. The fact, however, that they were added to the original hazard of being an only child and that their full weight fell on one child made them of greater significance."

In conclusion the application of mental hygiene to the child during the preschool age is the answer to the many problems which may arise in the homes of only children.

### REFERENCES

1. Anne Ward, "The Only Child," *Smith College Studies in Social Work*.
2. A. A. Brill, *Fundamental Conceptions of Psychoanalysis*.
3. Anne Ward, "The Only Child," *Smith College Studies in Social Work*.
4. *Textbook of Psychiatry*, Henderson and Gillespie.



## CHILD GUIDANCE CLINICS

MRS. E. T. BUTTERFIELD, Dallas Center

Child guidance clinics, whose purpose is preventive as well as curative work, were introduced in the United States in 1922 when the Commonwealth Fund established them in seven of our largest cities. Today knowledge on child rearing can be obtained through many different forms—books, magazines, radios, university and college courses. Sadler says that the first few weeks of a baby's life do much to determine his adult character. If he gets what he wants by crying for it, that same child as an adult will unconsciously turn to tears when a situation arises in which he is dissatisfied. At some time in his life that adult got his stick of candy, so to speak, by crying for it, and though he does not consciously realize it he turns to this infantile behavior to change his difficult life situations as an adult. Some go so far as to rank swearing or other vocal outbursts in the same category—infantile behavior, for instead of tears the vocalization got them what they desired as infants.

The important point about the psychopathology of the preschool child is, after all, the parent-child relationship. There is no mistake so great as to undertake to raise a child in a loveless home, but we must manage that love. The overanxious mother is going to pet and pamper her offspring and many times this will lead to a weak-kneed individual, if it does not later result in open rebellion against that person. The domineering father likewise produces sons who are weak-kneed and of the recessive type of personality, or in the more robust this may lead to defiance and truancy and in the less aggressive to sullenness and inferiority. Then, too, there is the tendency of parents to seek vicarious satisfaction in rearing children. Too often they seek to realize, in their children, attainments and satisfactions they failed to enjoy in their own youth. Our attitude should be one of firmness but fairness in order to secure a maximum of cooperation with a minimum of dominance.

Child culture is simply a problem of common sense, of reasonableness. Let us remember that, and all the child-training books and articles we read should mean nothing to us unless we can see the reasoning behind the suggested measures. In treating a preschool child we must first gain his attention. The commands should be few, appropriate, reasonable, and couched in the fewest possible words. Promises or threats which cannot be carried out are of no avail. In fact they are detrimental since they detract from the child's respect for his parents' word. Watson says that parents should attach less significance to the minor problems of stealing, lying and masturbation and more to the grave dangers of jealousy, self-consciousness, day-dreaming and temper tantrums which indicate serious personality disorders. Experiments prove very definitely that before the end of the first year a positive personality has been formed—that at that time one can tell if the child is the dominant type, the amiable or agree-

able or the exhibitionist or show-off. Isn't it important, then, that we spend more time with our children this first year than later?

Teach them obedience by choice. We do not want children to be taught to be good slaves, ideal servants or give them inferiority complexes. We want co-operative obedience. We must also give them sympathetic understanding. Answer their questions frankly and to the child's satisfaction. Gratify their curiosity and keep their confidence. Do not ignore their dream life, but try to give it a practical bent. If they play with imaginary children see that they have live pets or playmates to take the place of their "phantasy" playmate. Give them a positive training.

Let us take a look at some of children's nervous disorders—disorders that will lead them into a neurotic adulthood.

1. There are the disorders of personality: timidity, obstinacy, irritability, sensitiveness, shyness, day-dreaming, lack of sociability and emotional disturbances. To be concrete about one of these let us see what McDougall says about emotional disturbances. A child can be loved and feel secure in his parents' love without the usual hugging, kissing and fondling. These often lead the child after adolescence to engage in the so-called "petting parties." It stands to reason that children who were fondled and kissed and made a great fuss over in the nursery will want to be similarly indulged as they grow up. Or take the usual teary farewells or uncontrolled spasms of grief in times of illness or death. It is unnecessary that a child be near these latter named but if they must, our parental example of calm controlled emotions should aid.

2. Second are the disorders of behavior: truancy, wandering, temper tantrums, lying, stealing, begging, cruelty, sex misdemeanors, food fads and refusal of food. For example, let us take the refusal of food. Sadler says if correct eating habits are formed from the first, when at four weeks the baby begins to take his cod liver oil, it will be a simple matter to weather through the trying time of food refusal. Food habits should be cultivated by the following rules: set a good example by eating everything on your own plate, serve new foods in small portions (it isn't ridiculous to put but two peas on a plate), increase portions gradually, never talk of food dislikes in the child's hearing, do not discuss the child's passing whims for certain foods, completely ignore gagging over any food, develop an attitude of pride in a good appetite and a liking for all foods, keep the diet simple with few seasonings and do not let the child eat between meals unless it is fruit juice, even though he might have eaten nothing at the previous meal. When he refuses a certain food, serve no other until it has been eaten. If they skip one meal or three, the chances are that the fourth meal, although started with the same food refused on the previous occasions, will proceed uneventfully. It was not so long ago that a young man at our house was introduced to an oyster, which he snubbed at dinner, snubbed the following morning for breakfast,

but devoured with gusto when it made its usual appearance at lunch.

3. The habit disorders come next: nail-biting, thumb-sucking, incontinence, both day and night, constipation, vomiting and stammering. The causes of these vary so much with individual cases that professional guidance should be solicited.

4. The physical disorders such as migraine, crises of collapse, insomnia, night terrors, cyclic vomiting, chorea and epilepsy should be treated by a physician.

5. The psychoneuroses such as anxiety, hysteria, phobias, obsessions, compulsions, and tics all have their remedies although the layman cannot always take care of them himself. He can aid the physician in establishing the cause underlying these types of behavior and cooperating in the treatment. The physical symptoms of hysteria are uncalled for weeping, numb spots on the skin, imaginary pain, painful cramps, muscular distortions, trances, hysteric paralysis, vomiting sometimes without nausea, tics and tremors, some blindness, deafness, or perversions of taste. Actually, all hysterics represent a flight from reality. The psychosis or insanity represents more or less complete escape from reality. To resume let us take the patient, a child of six or seven years, who suddenly begins to contort his face and twist his neck. Naturally it is noticed by his parents and he is told about it and admonished not to do it. The condition grows worse and finally the parents must take him to a doctor. Would you be satisfied if the doctor said it was merely an act on the child's part to get a little attention from his parents—that physically there was no cause for this facial contortion, and as it started but for a definite purpose you as parents should ignore it, in the meantime giving the child more of your attention in his play and work? Or could you stand by unmoved while your child picks up a snake, plays with it, perhaps even throws it at you in play? Yet that is important in your child's rearing, for it may easily, if nurtured, grow into a phobia—fear of snakes. With one beautiful full-fledged phobia flourishing in this personality, what a good ground for others to enter in. You would be amazed if you could only read the psychiatrist's list of phobias, fear of high places, of being penned up in small enclosures, of dirt, of darkness, of germs, of sharp instruments, of people, and many others too numerous to mention. One can begin with the child, and at the first sign of any of these phobias check it by reasoning, by your own example, and by allowing the child to grow up with fear as a useful protective mechanism rather than a troublesome personality problem.

#### RESERVATIONS FOR NATIONAL MEETING

This is the last call for reservations for the Nineteenth Annual Convention of the Woman's Auxiliary to the American Medical Association which will be held at Hotel Carter in Cleveland, June 2-6. All Cleveland extends a hearty welcome to you. Make reservations directly with Dr. Edward F. Kieger,

chairman of the committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland, Ohio.

#### Dubuque County

The Woman's Auxiliary to the Dubuque County Medical Society held its annual meeting Tuesday, April 8. Luncheon was served to thirty-four at the Julien Hotel. Mrs. E. T. Warren, president of the State Auxiliary, was guest of honor, and several members of the Jackson County Auxiliary were also entertained as guests. After luncheon Miss Janice Bardill played two piano selections, following which Mrs. Warren gave an interesting talk on the activities of various state auxiliaries.

Mrs. R. R. Harris, Secretary

#### New Auxiliary in Greene County

Wives of physicians in Greene County met with Mrs. E. T. Warren of Stuart, president of the State Auxiliary, on Thursday, April 3, in Jefferson, and organized the Woman's Auxiliary to the Greene County Medical Society. The following officers were elected at a subsequent meeting, Thursday, April 10: Mrs. Phillips E. Lohr of Churdan, president; Mrs. Roy E. Parry of Scranton, president-elect; Mrs. Walter E. Chase of Rippey, secretary and treasurer; and Mrs. Laurence C. Hanson of Jefferson, chairman of Hygeia committee.

## DO YOU KNOW

That May is the time to help your community launch the Summer Round-Up?

That good health habits are best formed in the beginning years of your child's life?

That the best service you can render your child is to teach him good eating habits?

That a child will enjoy his food if feeding time is calm, unhurried and pleasant?

That a baby will take to new foods more readily if he is given one at a time and learns to like it before another is tried?

That a steady gain in weight is the best single sign of good nutrition and sound health in general, not only in an infant but in the growing child as well?

That evaporated milk should not be confused with sweetened condensed milk, which is not a suitable food for most babies?

That quiet, peaceful surroundings, adequate rest and sleep, proper food, safe drinking water, fresh air and sunshine, exercise, protection from disease, periodic examinations secured for your children by



you, mark you as an intelligent, understanding parent?

That babies who do not have enough sunshine may have a substitute in preparations containing Vitamins D and A, and that only your doctor can best advise you on how and when to give your baby this substitute for the sun?

That a child should be taken to the dentist at regular six-month intervals from the time he is two years old?

That a child is sometimes not hungry at mealtime because the day's activities have not been well planned?

That a child or an adolescent seldom admits being tired and that it is a parent's responsibility to see that he gets the rest he needs?

That it is wise to keep a record of your child's weight, height and illness?

That the best time for the yearly physical examination is late spring so that any defects or bad health habits may be corrected before another school year begins?

That you should find out whether your local school program promotes health?

That intelligent citizens should be concerned about the welfare of children of the state and of the nation as well as of that of their own children?

That they should promote legislation which protects the best interests of both mothers and children?

That adequate food and rest and peace of mind of mothers, or lack of them, have a direct influence on the child's welfare?

That considerate and cooperative fathers would further child welfare considerably?

That while a child's health depends upon both heredity and environment, the least a parent can do is to provide the best environment circumstances will permit?

That even if you are only a grandmother you should know modern methods for the feeding and the care of children and prospective mothers?

the part medicine contributed to detection. Here is something different with the added appeal of fact spiced with mystery and entertainment.

In a *Surgeon Explains to the Layman*, Dr. M. Benmosché tells the layman why and how the more frequent operations are performed. The appendix, tonsils, stomach, intestines, hernia, hemorrhoids, etc., are subject to discussion. Seventy-five line drawings make the book more lucid.

Dr. A. E. Hertzler made a literary name for himself with his *Horse and Buggy Doctor*, so that any new book written by him is always welcome. *The Doctor and His Patients* is Dr. Hertzler's view of the American domestic scene, with its multitude of physical and mental problems. He looks at American women, at children, at life and love with humor and honesty.

*Born That Way* is a record of Dr. E. R. Carlson's life and his handicap as a spastic. He trained himself in the field of his personal handicap so that up to this time 8,000 spastics or their parents have consulted with him. His desire in telling his story is to aid any cripple, anyone who is deaf or blind, or anyone who suffers from a nervous or mental disorder.

A comparatively new book on infections is *Germ and the Man*, by Justina H. Hill, an associate in urology at Johns Hopkins University. She discusses the nature and control of tuberculosis, syphilis, meningitis and tetanus, as well as the new developments in antitoxins and toxoids.

The vogue of memoirs by doctors is still under way and we have another by a woman doctor, Alfreda Withington, in *Mine Eyes Have Seen*. Dr. Withington is now eighty years of age, and she has found it pleasant to look back over her career as a practicing physician on two continents, and her adventures as a city and country doctor and a specialist. The late Sir Wilfred Grenfell wrote the introduction. Books by women who had the courage to take up medicine have a wistful appeal of their own because the odds against them are usually so heavy.

Mrs. Keith M. Chapler

## BOOK NOTES

Milton Silverman's *Magic In a Bottle* is a very new book about the discovery, preparation and use of modern miraculous drugs—quinine, digitalis, sulfanilamide and others. It is both factual and entertaining and has to do with a subject which is ever timely.

*The Doctor Looks at Murder*, by Dr. M. E. Marten, is medicine from a rather unusual angle. Dr. Marten, as Deputy Chief Medical Examiner of New York City, had ample opportunity to collect case histories of extraordinary murders with especial emphasis on

## SPEAKERS BUREAU RADIO SCHEDULE

WSUI—Tuesdays at 1:30 p. m.

WOI—Wednesdays at 2:05 p. m.

May 6-7 Preparation and Use of Human Serum, Eugene C. Wagner, M.D.

May 13-14 Dangers in The Indiscriminate Use of Drugs, Wm. B. Chase, Jr., M.D.

May 20-21 Allergy, Herman J. Smith, M.D.

May 27-28 Blood Banks, Elmer L. DeGowin, M.D.

## SOCIETY PROCEEDINGS

### Black Hawk County

James A. Greene, M.D., associate professor on the theory and practice of medicine, State University of Iowa, College of Medicine, Iowa City, spoke on Glandular Disturbances, Diabetes Mellitus and Pituitary Dysfunctions, at the regular monthly meeting of the Black Hawk County Medical Society, held in Waterloo, Tuesday, March 18.

### Calhoun County

Three Council Bluffs physicians furnished the scientific program for the Calhoun County Medical Society Tuesday, April 15, at a meeting held in Rockwell City. Subjects and speakers were: Treatment of Tetanus, McMicken Hanchett, M.D.; Newer Procedures in Diagnostic Medicine, Aldis A. Johnson, M.D., and Treatment of Subacute Throat Infections, Jack V. Treynor, M.D.

### Cass County

The regular monthly meeting of the Cass County Medical Society was held in Atlantic, at the Whitney Hotel, Friday, April 25. Following the six-thirty dinner the twenty-five doctors and members of the Woman's Auxiliary were addressed by Lee R. Rosebrook, M.D., of Ames on Athletic Injuries and Their Care.

R. M. Needles, M.D., Secretary

### Cerro Gordo County

Members of the Cerro Gordo County Medical Society met in Mason City Tuesday, April 8, for the following program: Intestinal Obstruction Due to Gall Stones, George M. Crabb, M.D., of Mason City, and General Information on Eyes, Kenneth C. Swan, M.D., of the State University of Iowa, College of Medicine, Iowa City.

C. O. Adams, M.D., Secretary

### Crawford County

Officers elected at a recent meeting to serve Crawford County Medical Society are as follows: Dr. Edward V. Zaeske of Charter Oak, president; Dr. Eugene J. Maire of Vail, vice president; Dr. Edward M. Mark of Denison, secretary and treasurer; Dr. Charles H. Fee of Denison, delegate; and Dr. A. H. Grau of Denison, alternate delegate.

### Dallas-Guthrie Society

Members of the Dallas and Guthrie County Medical Societies met in joint session with the dentists of the two counties Thursday, April 17, in Perry for the following afternoon program: Report of 4-H Examinations and the Follow-Up Treatment, Mrs. Lu-

ella Condon; and Oral Infection: Where the Physician and the Dentist Meet, A. Paul Atkins, D.D.S.

S. J. Brown, M.D., Secretary

### Dubuque County

John L. Keane, M.D., of Dyersville, addressed the Dubuque County Medical Society, Tuesday, April 8, on The Role of the Medical Examiner in Aviation.

### Greene County

The regular monthly meeting of the Greene County Medical Society was held at the Greene County Hospital in Jefferson, Thursday, April 10. Mr. Guy C. Richardson spoke on Medicolegal Problems.

John R. Black, M.D., Secretary

### Hardin County

On Friday, March 28, the Hardin County Medical Society held its regular meeting at the Winchester Hotel in Eldora. Clement A. Sones, M.D., of Des Moines spoke on The Heart.

W. E. Marsh, M.D., Secretary

### Humboldt County

The Humboldt County Medical Society held its monthly meeting Thursday, April 17, at the Hotel Humboldt. Following the dinner Henry G. Decker, M.D., of Des Moines, spoke on Relief of Intractable Pain. A number of physicians from Webster, Wright and Pocahontas counties were in attendance.

James H. Coddington, M.D., Secretary

### Jasper County

A motion picture film on Fracture Tables was presented and discussed at the regular meeting of the Jasper County Medical Society, Tuesday, April 8. Dr. J. W. Billingsley of Newton was in charge of the program.

### Johnson County

R. Russell Best, M.D., associate professor of surgery, University of Nebraska, College of Medicine, Omaha, was guest speaker for the Johnson County Medical Society, Wednesday, April 2, at its monthly meeting at the Hotel Jefferson in Iowa City. Dr. Best spoke on The Application of the Biliary Flush in the Treatment of Biliary Tract Disease.

A. L. Sals, M.D., Secretary

### Lee County

The regular quarterly meeting of the Lee County Medical Society was held at the Anthes Hotel in Fort Madison, Wednesday, March 26. The following program was presented: Common Surgical Abdom-



inal Emergencies, Oscar T. Clagett, M.D., of The Mayo Clinic, Rochester, Minnesota; The Factors in the Practical Consideration of Sulfamido Drugs, Alexander E. Brown, M.D., also of The Mayo Clinic; and Clinical Appraisal of Growth, Julian D. Boyd, M.D., of the State University of Iowa, College of Medicine, Iowa City.

Harold F. Noble, M.D., Secretary

#### Madison County

The Madison County Medical Society held its regular monthly meeting at the Winterset Community Hospital, Monday, April 21. Daniel J. Glomset, M.D., of Des Moines was guest speaker, his subject being The Making of a Cardiac Diagnosis.

Evelyn M. Olson, M.D., Secretary

#### Pocahontas County

Sumner B. Chase, M.D., of Fort Dodge, furnished the scientific program for the Pocahontas County Medical Society at a meeting held Friday, March 28, at the home of Dr. A. J. Callaghan in Pocahontas. Dr. Chase spoke on Mastoid Disease.

#### Polk County

The Des Moines Academy of Medicine and Polk County Medical Society held its regular meeting Wednesday, April 16, at the Iowa Methodist Hospital in Des Moines. Franklin E. Walton, M.D., assistant dean and instructor in clinical surgery, Washington University School of Medicine, St. Louis, addressed the group on The Treatment of Thyroid Disease.

#### Pottawattamie County

Meeting in regular session Tuesday, March 18, at the Mercy Hospital in Council Bluffs, members of the Pottawattamie County Medical Society heard William E. Ash, M.D., speak on The Modern Treatment of Nervous Disease. Dr. Ash also demonstrated the new electroshock treatment. Norman D. Render, M.D., newly appointed superintendent of the Clarinda State Hospital, spoke on The Mental Hospital Situation in Iowa.

#### Sac County

The Sac County Medical Society held its regular monthly meeting Thursday, April 17, at the Park Hotel in Sac City. The guest speaker was Paul T. Cash, M.D., of Omaha, Nebraska. Dr. Cash's lecture on The Newer Concepts of Psychiatric Therapy was illustrated with movies and lantern slides.

W. I. Evans, M.D., Secretary

#### Scott County

The final scientific session of the Scott County Medical Society before the summer recess was held in Davenport, Tuesday, May 1, at the Lend-A-Hand Club. John L. Emmett, M.D., of The Mayo Clinic, Rochester, Minnesota, was guest speaker, taking for

his subject, Difficulties in Diagnosis Encountered in Various Types of Urinary Retention.

J. H. Sunderbruch, M.D., Secretary

#### Van Buren County

Thomas L. Vineyard, M.D., of Ottumwa, presented an illustrated lecture on The Anorectal Diseases Most Often Overlooked by the General Practitioner, for members of the Van Buren County Medical Society, at a dinner meeting held in Keosauqua, Thursday, March 20.

#### Wapello County

The Wapello County Medical Society entertained Edwin Davis, M.D., professor of urology, University of Nebraska, College of Medicine, Omaha, as its guest speaker at the meeting held in Ottumwa, Tuesday, April 15. Dr. Davis spoke on Diseases and Surgery of the Prostate Gland, and illustrated his talk with slides and moving pictures.

#### Woodbury County

About 125 members of the Woodbury County Medical Society and guest physicians from South Dakota and Nebraska attended the monthly dinner and meeting of the organization Thursday, March 27, at the Martin Hotel in Sioux City. The speaker of the evening was Lewis M. Overton, M.D., of Des Moines, who presented an illustrated lecture on Fractures of the Bones of the Hand and Forearm.

W. K. Hicks, M.D., Secretary

#### DEATH NOTICES

Burgess, Jonathan Arthur W., of Iowa Falls, aged seventy-two, died March 26, in Chicago, of a heart attack. He was graduated in 1895 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Hardin County Medical Society.

Madden, William Dunn, of Clinton, aged sixty-four, died March 29, after a year's illness. He was graduated in 1903 from the University of Illinois, College of Medicine, Chicago, and at the time of his death was a member of the Clinton County Medical Society.

Moore, Fred, of Des Moines, aged fifty-seven, died April 8, of cancer of the stomach. He was graduated in 1911 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Polk County Medical Society. A complete obituary will be found in the History of Medicine section of this issue.

Stone, Roy Daniels, of Sully, aged fifty-five, died in Newton, March 25, of a streptococcic infection, complicated by pneumonia and heart disease. He was graduated in 1910 from Hering Medical College, Chicago, and at the time of his death was a member of the Jasper County Medical Society.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. TOM B. THROCKMORTON, Des Moines

DR. JOHN T. MCCLINTOCK, Iowa City

DR. WALTER L. BIERRING, Des Moines

DR. R. T. LENAGHAN, Clinton

DR. HENRY G. LANGWORTHY, Dubuque



## Fred Moore, B.S., M.S., M.D.

May 10, 1883 — April 8, 1941

With the passing of Dr. Fred Moore from our midst we have come to feel more keenly what a large part he filled in our lives. All of us retain a deep sense of satisfaction for having known him as well as a conscious emotion of pride to have been counted among his friends. He moved among us in his quiet unassuming way, yet in a world of cloudy and confused thinking it was a joy and an inspiration to have known a mind of such honest direction and clearness as that of Fred Moore.

Born at Harlan, Iowa, May 10, 1883, reared in the environment of a rural pioneer home, educated in the schools of his native state, he came to manhood and gave the best of his life, his energy and enthusiasm for human service in professional labors, medical education and every form of civic betterment.

He first attracted attention at the University of Iowa in the field of athletics. He was a half mile runner on the track team, played as end on the 1903 football team, and became an outstanding center of the winning football teams of 1904 and 1905. In athletic circles they still recall his great feat of beating the ball from the kickoff and tackling the receiver right on the spot.

His scholastic record was always high, and he early became biologically minded, possibly due in large part to the inspiring influence of his science teachers, Calvin, Macbride and Nutting, and the impress of these masters no doubt governed his thought and actions throughout the coming years. He obtained the degree of Bachelor of Science in June, 1906. During his senior year he was elected to membership in Sigma Xi scientific honor society. Instead of entering a medical course at this time, he evidently felt the urge for further study in biology, and the following year he enrolled at the University of California under Professor Kofoid, eminent authority in zoology, receiving the degree of Master of Science in June, 1907.

In choosing a medical school he was attracted by the advantages offered by Western Reserve University Medical School, Cleveland, Ohio, where he matriculated for the freshman year in September, 1907. Before the opening of the sophomore year he made a visit to Iowa City and had a conference in regard to continuing his medical course at Cleveland. In view of his fine scientific background he was offered a scholarship to be followed by a fellowship in internal medicine. This appealed to him, but the deciding factor was the suggestion that he owed it to Iowa to graduate from her university medical school. While an undergraduate fellow in internal medicine he had a prominent part in establishing a laboratory of clinical chemistry and also completed an interesting research on blood pressure, particularly in the use of the auscultatory method and the significance of diastolic pressure. He received the degree of Doctor of Medicine in June, 1911, at which time he also sat for the license examination of the Iowa State Board of Medical Examiners. It is significant to note that his average grade was 94.5 per cent. He completed a general hospital internship at Montreal General Hospital July 1, 1912. During this service he attracted the attention of Dr. Alfred Turner Bazin, professor of clinical surgery at McGill University which led to a friendship that was continued by frequent visits throughout the later years.

After returning to Iowa he entered the practice of medicine at Harlan where his mother resided, but after one year he located at Glidden, Iowa. He was married October 15, 1913, to Miss Augusta Brown of Wall Lake, Iowa, who now survives him with three children, Fred Brown Moore of San Francisco, Elizabeth Pauline Moore and Richard Morris Moore of Des Moines. At the end of a year of practice at Glidden the urge for further graduate study became manifest again,



and he entered the service of Dr. John Howland, professor of pediatrics, Johns Hopkins Hospital, Baltimore. Dr. Moore often referred to his Baltimore experience as the most interesting period of his medical life. He became an enthusiastic pupil of his chief and joined the long list of leaders in pediatrics trained in the service of John Howland. Dr. Moore came to Des Moines in the late summer of 1915 to enter the specialized practice of pediatrics. He was the second physician in Des Moines to limit his practice to this specialty, having been preceded a few years by Dr. M. L. Turner.

Soon after locating in Des Moines he was appointed School Examiner by the City Board of Education, and two years later became Director of School Health Service for the Des Moines schools. The organization and direction of this service covering a period of more than twenty-five years will always be regarded as one of his outstanding achievements. In cooperation with Dr. John W. Studebaker, then superintendent of the Des Moines school administration, now United States Commissioner of Education, Dr. Moore had a large part in the construction, equipment and later direction of the Smouse Opportunity School, an institution which has become a model of its kind in this country.

He early became a member of the Central States Pediatric Society. In 1930 when President Hoover called the White House Child Health Conference, Dr. Moore was named a member of one of the important committees, that of School Health. His duties in this field required a number of visits to Washington and the greater part of a year in the preparation of the final report. This brought him

in close contact with the leading pediatricians of the United States, and proved to be the beginning of a friendship with Dr. Ray Lyman Wilbur, the general chairman of the Conference, which ripened with succeeding years. When the American Academy of Pediatrics was organized in 1931, Dr. Moore became a charter member, and with the founding a few years later of the American Board of Pediatrics, he was listed in the Founders group and became a diplomate of this certifying specialty board. He was a member of the Com-

mittee on Child Health and Education of the Iowa State Medical Society and since 1936 was Pediatric Consultant to the Division of Maternal and Child Health of the State Department of Health. His wise counsel in connection with this field of public health service was of inestimable value. In 1930 he was elected an alumni member by the Iowa chapter of Alpha Omega Alpha Honor Medical Society.

In medical society organizations there was no more devoted and enthusiastic worker. He served the Des Moines Academy of Medicine and Polk County Medical Society as president in 1934. It is generally recognized that his most important



FRED MOORE, M.D.—1883-1941

service in the Iowa State Medical Society has been as Chairman of the Legislative Committee. His rare tact and diplomacy in approaching legislative bodies have brought forth the constructive medical legislation of the last eight years.

He was elected to the House of Delegates of the American Medical Association for the first time in 1931 at the Philadelphia session and served continuously from that time. The ease with which he gained the confidence of the members and a leading place in their deliberations was further

tribute to his sound medical judgment and attractive personality. Those who were privileged to hear his reports of important committees marveled at his facility of presentation, his ability to answer arguments and his knowledge of parliamentary procedure. The honor of having the presidency of the American Medical Association come to Iowa in 1933 was in a large measure due to Fred Moore.

At the Cleveland session in 1934 his nomination as a member of the Council on Medical Education and Hospitals for the term of seven years was approved by the House of Delegates. During this period the Council completed a three-year comprehensive survey of the medical schools of the United States and Canada which will have a profound influence on the future trend of medical training in this country. His last meeting with the Council was in November at Washington, D. C., and on the return trip he attended the annual session of the American Academy of Pediatrics at Memphis.

#### DR. FRED MOORE\*

"A good many thousand children who have gone through the Des Moines public school system, and their parents also, are indebted to Dr. Fred Moore. Not a lot of them, we presume, know it. And we are quite certain that the question of whether they knew it never crossed Fred Moore's mind.

"It was more than 25 years ago that this then young physician, full of a zeal that he never lost, began his practice here and took the newly created job of school health director.

"He was not a spectacular fellow. He was just earnest and tireless. And he began a children's health program that has now rounded out almost a generation, and that has become a model for the nation.

"We understand that the Des Moines schools have this year been remarkably free from diseases that at one time were accepted as a matter of course, even occasionally in epidemic proportions.

"This was the goal that Fred Moore pointed toward a quarter century ago. It is not a thing that is achieved overnight, and he knew it.

"Rather, it is a thing that could only be achieved by year upon year of patient and painstaking instruction at school and in the home, about the importance of simple hygiene, about common-sense physical education, about regular examinations and dental care, about the dozen commonplace practices and precautions that civilized peoples rely upon to insure physically healthy bodies.

"It took time for the tremendous effects of this program to become tangible and apparent, but they did become that.

"And so striking was the evidence, when cumulatively it began to show, that Federal Security Administrator McNutt and Commissioner of Education Studebaker a year or two ago induced Dr. Moore

His colleagues little thought that the parting hand-clasp was a final farewell. Dr. Moore was deeply interested in the aims and purposes of the Iowa Interprofessional Association, being particularly concerned in arranging an attractive program for the Davenport meeting of the Iowa State Medical Society when an afternoon session is to be devoted to interprofessional topics.

Accustomed by daily contact with this fine example of sturdy and vigorous American manhood, it came as a shock to family and friends to learn that he was to be the victim of a malignant disease of the stomach and liver. Yet no one came to "crossing the Bar" with finer courage, thoughtful of everyone, even beyond the family circle, planning for those who were to carry on, often intermingled with bits of old time humor, and through it all with that equanimity of spirit symbolic of this great soul.

WALTER L. BIERRING, M.D.

to help them bring out a little book, embracing the Des Moines plan of school health work, that could be distributed throughout the country as a guide for other communities.

"So the outline was written and distributed. It is an amazingly comprehensive document, flowing from much experience and the most intense devotion to a wholesome public purpose.

"It has been a terribly sad experience for Fred Moore's family and his hundreds of intimate friends, knowing that he was going to go. But one dared not have less courage than he himself had.

"Indeed, this has given time to appraise with greater justice the full meaning and value of his service to the society he lived in.

"In the field of medicine and especially children's diseases, he played an important rôle much more than local, in addition to the school health program. He had been a delegate to the American Medical Association from this state for a decade. He had been on the association's Council on Medical Education and Hospitals. He was a consultant on maternal and child health for the state department of health. He was a member of President Hoover's child health conference in 1930.

"As an individual, Fred Moore was quiet, anything but obtrusive, yet firm in his convictions.

"And they were convictions almost invariably arrived at through serious study and objective reasoning, not capriciously.

"If a point of fact came into dispute, he was not satisfied until an authentic source of information had been found and the truth established.

"His sense of humor was delightful. He had a 'way' with people that was patently genuine and that made immediate and lasting friendships.

"By any standards, this man earned richly the respect and appreciation of those within the reach of his influence."

\*Reprinted from the Des Moines Evening Tribune, April 9, 1941.



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**ARTHRITIS AND ALLIED CONDITIONS**—By Bernard I. Comroe, M.D., instructor in medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1940. Price, \$8.50.

**OBSTETRICS AND GYNECOLOGY**—Edited by Fred L. Adair, professor of obstetrics and gynecology, University of Chicago. Two volume illustrated set. Lea and Febiger, Philadelphia, 1940. Price, \$20.00.

**THE INJURED BACK AND ITS TREATMENT**—Edited by John D. Ellis, M.D., Chicago. Charles C. Thomas, Springfield, 1940. Price, \$5.50.

**PHYSICAL DIAGNOSIS**—By William Nance Anderson, M.D., associate clinical professor of medicine, University of Southern California, School of Medicine, Los Angeles. Lea and Febiger, Philadelphia, 1940. Price, \$4.75.

**MEDICAL NURSING**—By Edgar Hull, M.D., clinical professor of medicine, Louisiana State University School of Medicine, New Orleans. F. A. Davis Company, Philadelphia, 1940. Price, \$3.50.

**APPLIED PHARMACOLOGY**—By Hugh Alistair McGuigan, M.D., professor of pharmacology and therapeutics, University of Illinois, College of Medicine. Illustrated. The C. V. Mosby Company, St. Louis, 1940. Price, \$9.00.

**PHYSICAL DIAGNOSIS**—By Ralph H. Major, M.D., professor of medicine, University of Kansas. Second edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price, \$5.00.

**OBSTETRICS IN GENERAL PRACTICE**—By J. P. Greenhill, M.D., professor of obstetrics and gynecology, Loyola University Medical School. The Year Book Publishers, Chicago, 1940. Price, \$3.50.

**VITAMIN THERAPY IN GENERAL PRACTICE**—By Edgar S. Gordon, M.D., associate in medicine, and Elmer L. Severinghaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1940. Price, \$2.75.

**THE DOCTOR AND THE DIFFICULT CHILD**—By William Moodie, M.D., Medical Director, London Child Guidance Clinic. The Commonwealth Fund, New York, 1940. Price, \$1.50.

**THE 1940 YEAR BOOK OF GENERAL MEDICINE**—By George F. Dick, M.D., J. B. Amberson, Jr., M.D., George R. Minot, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1940. Price, \$3.00.

**OFFICE UROLOGY**—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1940. Price, \$10.00.

## BOOK REVIEWS

### THE 1940 YEAR BOOK OF INDUSTRIAL AND ORTHOPEDIC SURGERY

Edited by Charles F. Painter, M.D., Massachusetts Women's Hospital, Boston. The Year Book Publishers, Chicago, 1941. Price, \$3.00.

The 1940 Year Book for the first time has devoted a volume to Industrial and Orthopedic Surgery. It is edited by Charles F. Painter, M.D., and in it one finds a review of 276 outstanding papers of the past year. The reviews are adequately illustrated by reproduced illustrations. The subject matter has been obtained for the most part from outstanding national and international publications. Many of the articles which have been abstracted have been previously read in the original by the reviewer, and the impression was gained that the abstract fully brought out the salient points of these various articles. For those who do not have the time or the inclination to keep abreast of the current literature, this book is highly recommended. It is a handy reference book to have on the shelves of one's library.

D. N. G.

### MANUAL OF CLINICAL CHEMISTRY

By Miriam Reiner, M.Sc., assistant chemist to Mount Sinai Hospital, New York. The Interscience Publishers, Inc., New York, 1941. Price, \$3.00.

Sobotka states, in the introduction to this volume, that the purposes of the *Manual of Clinical Chemistry* are: first, to give at least one method for every contingency; and second, to select those methods which combine greatest accuracy with greatest simplicity.

The scope of the manual is limited to the fulfillment of these purposes, that is, to the presentation of widely used and accepted procedures in clinical chemistry. Following a concise statement of the principle involved, the necessary reagents are listed and the procedure is given in outline form. When necessary, tables and simple diagrams of apparatus are included.

The book should prove to be a valuable supplement to more pretentious volumes dealing with biochemical methods.

R. F. B.

### IT IS YOUR LIFE

By Max M. Rosenberg, M.D., New York. The Scholastic Book Press, 158 East 22nd Street, New York, 1940. Price, \$2.50.

Dr. Rosenberg has, in this book, given to the layman a readable treatise on the general principles of physical and mental hygiene.

General body cleanliness and hygiene of the skin, eyes, ears, nose, throat and teeth are given detailed consideration in early chapters. Important chapters deal with diet, vitamins, digestion, elimination, the endocrine glands and the related subjects of sex, marriage and reproduction with their physical, psychologic and moral implications. Chapters on the heart and the mind contain much useful and comforting information. Dr. Rosenberg avoids such specific information as would encourage the layman to diagnose or prescribe for himself, but rather opens the way for intelligent cooperation between patient and physician. One might question the author's reactionary attitude toward the more modern and potent therapies, for instance his statement that alcohol is the greatest single cause of neurosis and in-

sanity and his over-simplification of certain etiologies, but his errors, if any, are on the side of safety and conservatism.

As the title indicates there runs through the book a plea for such conduct as will promote a healthy, a happy and a long life.

R. C. D.

#### ELECTROCARDIOGRAPHY IN PRACTICE

By Ashton Graybiel, M.D., and Paul D. White, M.D., Harvard Medical School. W. B. Saunders Company, Philadelphia, 1941. Price, \$6.00.

This book on electrocardiography is really an atlas of cardiograms depicting normal and pathologic findings. A short but adequate description of the principles and technic of electrocardiography is given and is followed by a description and explanation of the normal electrocardiograms.

Many variations of the normal tracing are shown and reasons cited for those variations. This is an especially interesting and important feature, particularly at the present time, when some small variations are being given undue significance by many relatively inexperienced interpreters. A section on the arrhythmias does not present any particularly new information, but the tracings are clear, well spaced and are always faced on the opposite page with explanations and, usually, case histories. A short discussion is given and a few tracings are shown from cases of congenital heart disease and this is followed by the same type of information on rheumatic heart disease, cardiovascular syphilis, diphtheria and other infections. Avitaminosis and malnutrition, together with endocrine disturbances, are also illustrated. Hypertensive heart disease and pulmonary hypertensive heart disease are adequately portrayed. Coronary heart disease is beautifully presented in considerable detail. Pericarditis is delineated and the action of drugs on the heart is well illustrated.

The feature of the book is given in the second part, which consists of electrocardiograms for practice in interpretation. There are many of these tracings and the history and findings of each case are to be found on the opposing page of each tracing. This book will be very helpful to the student of electrocardiography because of its clear tracings and explanations and rather remarkable completeness.

J. C. P.

#### DIABETIC MANUAL

By Elliott P. Joslin, M.D., clinical professor of medicine, emeritus, Harvard Medical School. Seventh edition, thoroughly revised. Lea and Febiger, Philadelphia, 1941. Price, \$2.00.

This book is written for the diabetic patient, his relatives, and any one concerned with the management and care of the treatment of the diabetic individual. The stimulus of the author for this revised edition was that there is always something new in

this field and that a new birth in the treatment of diabetes is at hand. It is filled with information which the diabetic patient must have in order to live long and feel well with his disease. The question and answer section is especially educational.

Since simplicity and education constitute the keynote of the treatment of this disease, the doctor may make his task much easier by advising his patients to use this manual.

E. B. W.

#### VITAMIN THERAPY IN GENERAL PRACTICE

By Edgar S. Gordon, M.D., associate in medicine, and Elmer L. Sevringhaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1940. Price, \$2.75.

Advances in nutritional diseases have been remarkably rapid during the past several years. Other diseases are frequently added to this nutritional group as able researchers prove their etiology is due to a deficiency of vitamins.

It is difficult to keep abreast with the rapid advances made in this field, since the literature is voluminous, but the authors of this book have presented the latest advances in vitamin therapy in a clear concise manner. The newer aspects of mineral, protein and carbohydrate metabolism is emphasized. Methods of control of body weight are briefly discussed, but to the point, and the problems of dental nutrition are presented thoroughly. The chapter on economics of nutrition should be studied, not only by the medical profession, but by all persons connected with the distribution of food to citizens on relief.

It is an excellent treatise on vital subjects which affect the health of our nation.

A. M. S.

#### AMERICAN MEDICAL GOLFING ASSOCIATION

The American Medical Golfing Association's Twenty-Seventh Annual Tournament will be held at the Cleveland Club and the Pepper Pike Club, Cleveland, Ohio, Monday, June 2, 1941. Two famous championship courses and a beautiful clubhouse await the nation's medical golfers in Cleveland on the occasion of the A. M. A. Convention.

Some 250 of the 1,413 Fellows of the A. M. G. A. are expected to take part in this thirty-six hole competition. Each contestant will play both courses. The hours for teeing off are from 7:30 a. m. to 2:00 p. m. The sixty prizes, in the nine events, will be distributed after the banquet at the Cleveland Country Clubhouse at 7:00 p. m.

Officers of the A. M. G. A. for 1941 are D. H. Houston, M.D., Seattle, president; Harry E. Mock, M.D., Chicago, and James Craig Joyner, M.D., New York City, vice president; and Mr. Bill Burns, Lansing, secretary.

All members of the American Medical Association are eligible for fellowship in the A. M. G. A. Write the secretary, 2020 Olds Tower, Lansing, Michigan, for registration application.



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### THE PRESIDENT'S ADDRESS\*

#### The Public's Interest in High Professional Standards

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At this time it is a pleasure for me to follow the custom that requires the President of this Society to deliver an address at the end of his administration. Probably consideration of the present status of the Society would suffice, but the reports of the various officers and committees who have worked so faithfully during the year make this unnecessary. I need only say that your Society was never stronger numerically, financially, in its educational program, both lay and professional, in its preparation for the defense of our country, in its keen awareness of the problems confronting the profession and its ability to solve them. In other words, your Society is stronger both physically and spiritually today than ever before. This strength is not due to the work or influence of any one person or any group of persons. Primarily, it is due to the loyalty of each of our 2,500 members to the ideals, principles and traditions which have actuated the medical profession since antiquity. Secondly, it is the result of the planning and foresight of our past leaders who perhaps "built better than they knew." Therefore, I feel it will be more appropriate to consider briefly the significance of the efforts of organized medicine to maintain and elevate the standards of medical practice. They have always been of supreme interest to the medical profession. The very fact that laws providing for scientific qualifications for the practice of medicine and surgery and for their strict enforcement have been generally incorporated in the statutes of all countries suggests that the general public also has an interest in professional standards, although at times the public's reactions to attempts to improve them seem to belie the fact.

It has been said that laws are justifiable only

upon the grounds that they promote and achieve public purposes and result in public benefits.<sup>1</sup> To the extent to which these ends are accomplished, laws are desirable. Certainly any unprejudiced review of the laws governing medical practice, sponsored in the past by the medical profession, will indicate that they fulfilled these requirements. All the laws we have advocated had as primary objectives the elevation of the standards of medical practice, and the protection of the public against incompetents, charlatans, humbugs, frauds and quacks. We have insisted that those practicing medicine shall possess the requisite learning, training, ability and character and that their training shall be based upon scientific knowledge. Because the knowledge is scientific, it must necessarily be demonstrable of proof. While theorizing as to the causes and effects of disease is essential to the increase of our knowledge, theories can never be the basis of scientific medicine which necessarily must be based upon proved facts.

As early as 1766, attempts were made to regulate the practice of medicine in this country but it was only in the late years of the nineteenth century and the early years of the twentieth that state medical boards, with power to examine all candidates and to license those who were successful in meeting their standards, were generally established. Up to that time there was indiscriminate acceptance of school credentials, and the establishment of the state medical boards did much to improve medical practice, but it must be recognized that their power for good has been limited by lack of funds and at times by political control. Most informed persons agree that a single examining board to pass upon the qualifications of all persons who desire to be licensed to treat disease would best protect the public. The fact that two or more boards have been established in this and many other states to license doctors of medicine, as well as those persons desiring to practice some form of medicine modified to their own whims, is striking evidence of how small groups, through political activity, can nullify the sincere efforts of the med-

\*Presented before the Ninetieth Annual Session, Iowa State Medical Society, Davenport, May 14, 15 and 16, 1941.

ical profession which is always striving to elevate medical practice.

It was not by chance but rather the result of considered judgment, that the founders of this Society, over ninety years ago, included in Article 2 of our Constitution the following: "The purpose of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of Iowa, and to unite with similar associations in other states to form the American Medical Association, with a view to the extension of medical knowledge and to the advancement of medical science, to the elevation of the standard of medical education and to the enactment and enforcement of just medical laws."

Other state societies defined their aims in similar statements and in 1848 they became guiding principles of the American Medical Association. During the next fifty years, the advances in the medical sciences were rapid, but progress in medical education was delayed largely because of the war between the states and the rapid expansion of a new country. In 1901, the American Medical Association was reorganized along the present lines and immediately there followed an inquiry into the methods and standards of all medical schools. State medical boards furnished data indicating the relative success or failure of the graduates of the 160 schools then operating in this country. From these studies it was apparent that medical education was lagging far behind that of some European countries and that the need for improvement was imperative. As a result the Council of Medical Education was established in 1904. Personal inspections of the medical schools centered attention on the prevailing lack of standards, the meager resources and the untrained personnel in many of the low grade and proprietary schools. In 1908, because of resentment of the Council's criticisms by the poorer schools, an invitation was extended to the Carnegie Foundation for the Advancement of Teaching to make a survey of medical education. The results of the survey, which was conducted by Mr. Abraham Flexner, were published in 1910 and stimulated revolutionary improvement in our medical schools and related institutions. Besides the Carnegie Foundation, other philanthropic foundations, numerous individuals, the Association of American Medical Colleges and the Federation of State Medical Boards cooperated with the Council in bringing about probably the most commendable accomplishment that has occurred in the educational field in the history of this country. The Council's work still continues and from its reports for the years 1934 through 1939, the need for continued diligence in stimulating some schools is still apparent.

Today instead of the 160 unstandardized schools of 1910, we have 66 schools which probably are unexcelled in the world. This assures the general public that a graduate of our medical schools is properly qualified in the diagnosis and treatment of human ills. To be so qualified a young man or woman must devote at least six years and usually eight at college and medical school after graduation from high school. Upon graduating from medical school, they usually spend another two years as supervised internes or residents in Council approved hospitals and not infrequently this period is extended to five or more years. I know you are familiar with these facts but I mention them because not only the ordinary public but even some of those in high places do not seem either to recognize them or comprehend their significance as regards the public welfare. Such individuals should ponder the meaning of the following sentence from an article by Ray Lyman Wilbur,<sup>2</sup> one of America's great educators: "There is no possible substitute for competence in medical care, and competence can come only from education and training."

The effects of this profound educational movement have not been confined to the medical profession alone. As a result of it there was a corresponding improvement in the allied professions of dentistry, nursing, pharmacy and of hospital administration. Likewise our brethren, the veterinarians, for many years have had a more scientific educational program than cults who are permitted by law to treat sick people. Incidentally, is it not strange that the cults with their odd theories of the causation of disease have never demonstrated that they apply to the diseases of animals? Higher professional standards have also been developed for the different groups of medical technologists who play such an important part in modern medical practice. Through improved postgraduate educational programs in medical schools and like those carried on by our Speakers Bureau, it is possible for every practitioner to keep abreast of the advances in medical sciences and in turn to apply them in daily practice for the better care of the sick. Through certification after examination of those doctors who limit their practice to one of the special fields of medicine, the profession is eliminating certain evils which had crept into the use of the term specialist. Today or in the very near future, the qualifications of an acceptable specialist in any field of medicine shall be judged not by himself but by a group of experts in the same field. This will protect the public against incompetents in the several specialties.

The result of the steady improvement in the training of medical graduates is reflected in con-



stantly falling morbidity and mortality rates and in the prolongation of life. They have exceeded the most optimistic prophecies of twenty-five years ago and today one can, without exaggeration, predict a still further reduction of fifty per cent for certain diseases. Already the results have radically changed the practice of medicine and these changes will become greater in the future. Up to this time we have been largely concerned with caring for more or less acutely ill patients and the mass prevention of infectious diseases by specific inoculations and sanitation. Now we can be more concerned with the health of the individual and we must pay greater attention to the prevention of the virus, mental, malignant and occupational diseases and those associated with some form of malnutrition or the process of aging. Above all we should be the leaders in developing methods of improving the general health and stamina of our young people. Today we are hearing much of the defects that are being encountered in draftees, but every doctor knows that most of them are minor and by known health measures are largely preventable. Undoubtedly a program of beneficial exercises with proper medical supervision for every child from early school days through high school or college would work wonders in improving the health of our young people in a comparatively short length of time. However, it must not be forgotten that even if such a program were adopted, the health of the children largely depends upon the health of the parents and especially of the mothers. The betterment of their health must always be one of our first considerations. To realize the broad health program thus sketchily outlined requires that the people of this country shall appreciate its value, demand that it be put in force, and be willing to make the necessary sacrifices to support it. The general public must realize that the medical profession is the sole custodian of the wide range of scientific knowledge and training necessary to direct such a health program.

In spite of the greater competency of the medical profession we all recognize that many people do not receive good medical attention. There seem to be many reasons for this but fundamentally there is only one. The time when sickness was surrounded by superstition, mystery and magic is so recent that many people have inherited more or less gullibility about disease. Even some graduates of medical schools are not immune and therefore we are not surprised at the credulity of a goodly portion of the general public. Human nature being what it is, it is also not at all surprising that there are people who take advantage of this fact. Indeed many of the laws sponsored by the medical profession have been written to

protect the public against its own gullibility. In spite of these laws, altogether too many people depend upon self-diagnosis and treatment or upon substandard grades of medical treatment based upon queer theories of disease. The first group is encouraged by the advertising of patent medicines; the second by that of the cultists, charlatans and outright quacks. From the standpoint of scientific medicine, the latter groups are just about 300 years behind the times, with this difference—they can use neon lights and high-powered radio stations to advertise their wares! Probably many will retain their gullibility until the facts of biology and of life become generally known, but our legislators should always be wary of legislation which will tend to lower the standards of medical practice. Each year the medical profession is compelled to oppose legislation proposed by cultists. We do this solely because the different cults are constantly endeavoring to obtain privileges of practice outside their own fields as they have defined them. To be more definite, they want to practice medicine but they do not want to spend the time or money necessary to become competent to do so. They want a short cut to the practice of medicine and in the past they have at times been aided by those legislators who have favored laws which we know tend to lower professional standards. Is it not rather absurd for our legislature to appropriate a million dollars a year to maintain high standards for the graduates of our University Medical School and then turn around and give bit by bit, almost equal privileges to the graduates of cultist schools of whose standards they know nothing? The medical profession should be relieved of this burden of opposing ill-advised legislation at each session of the legislature. The general public, which is most concerned, should demand for its own protection that there shall be only one board to examine the qualifications of every man or woman who desires to treat the sick in Iowa. Thus the public would be assured of one educational standard, whereas at present multiple examination boards mean multiple standards.

Another challenge to our endeavors to elevate professional standards now confronts organized medicine as the result of the verdict against the American Medical Association by a Federal Jury in Washington, D. C., last month. You are all aware of the oddities of that trial because they were freely exposed by the daily press and I need not consider them at this time. Of much greater importance is the fact that if the verdict is sustained, certain fundamental and basic rights of the profession will be jeopardized. These are the very rights involved in the methods by which the improvement in medical education and practice has

been rendered effective. If we as a profession lose the right to select and control our own membership, the right to judge the educational and ethical standards of those desiring to practice medicine, the right to judge the qualifications of physicians on hospital staffs and the right to supervise the training of internes, it is obvious that the practice of medicine will return to the chaotic conditions of the middle ages. Organized medicine must fight to maintain its system of improving medical education and its voluntary code of ethical principles governing medical practice. The general public who will be the real sufferers in the event that they are lost must be informed as to its vital interest in this all-important issue.

In conclusion it may be stated that the medical profession, through its voluntary program for the improvement of medical education, has set an admirable pattern and standard for other forms of professional education. The benefits to the general public from this high standard of professional education are inestimable, but are reflected in constantly falling morbidity and mortality rates for many diseases, in the better health of our people and in the prolongation of life. The medical profession has sponsored only such laws as will better the care of the sick, bring about improvement in the health of communities, and aid in elevating the educational standards of medical graduates. We contend that all those who diagnose and treat disease should be proved competent to do so according to a single standard of qualifications, based upon current scientific knowledge. The public, who is most vitally concerned in better medicine, should beware of those forces who by political methods are constantly attempting to legalize substandard methods of treating the sick or to enter the practice of medicine by devious routes. This is so obviously detrimental to the public welfare that our legislature should give serious consideration to the abolishment of the present multiple boards with multiple standards and the establishment of a single board of examiners with one standard which shall pass upon the qualifications of all those who wish to treat the sick regardless of the term used to designate a particular form of practice. At this time the defense of our country is a paramount issue. In the emergency there may be threats to the high standards of medical education and practice. Because we know from experience that once standards are lowered it is exceedingly difficult to raise them again, we must be especially alert to repel such threats as they arise.

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## TREATMENT OF FRESH BURNS WITH SCARLET RED BANDAGE AND MOIST SULFANILAMIDE DRESSINGS

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Perhaps no surgical situation requires more personal attention and greater individualization than does the successful management of burns, for the extent and depth may so vary that the problem may be only one of mild local discomfort without loss of tissue and no threat of life, or it may be hopeless at the onset from the extent of the involvement. The more seriously burned patients who survive present the problem of managing the initial period in which shock is present, carrying them through the period during which the areas of second degree burn become epithelized, and the areas of third degree burn covered by ingrowth of epithelium from their margins or by grafts, and finally the securing of optimum return of function and the best possible cosmetic result by physiotherapy and plastic procedures when required.

The physician who has the opportunity to initiate the treatment of a serious burn is in a position to save the patient much discomfort, and in the subsequent management greatly shorten the patient's convalescence and the extent of permanent disability. The initial treatment must be modified by the location, extent and depth of the burns and the age and condition of the patient. However, in most instances the burned surfaces may be treated after administration of the preliminary opiates if carried out in a warm room. A general anesthesia may occasionally be necessary to accomplish adequate cleansing of grossly soiled burns. However topical anesthesia with metacaine, two per cent, frequently suffices, and in burns presenting a clean appearance the opiate alone furnishes adequate analgesia for gentle debridement and washing.

Local preparation of the burned area has as its object mechanical removal of surface contamination to such an extent that healing without infection may occur. This cleansing may be well accomplished by the use of sterile soap solution and gentle friction with gauze dressings. Loosened epithelium is removed by friction of the gauze dressings or by use of forceps and scissors in areas where the marginal epidermis is thick and tough. The surgeon preparing the burn should be as careful to prevent introduction of bacteria as he would be in handling exposed viscera and his preparation should include the usual surgical scrubbing of hands and use of cap, gown and mask.

Once a burned area is rendered surgically clean it may be covered in such a manner that the



burned surface is protected until areas of second degree burn become covered by proliferation of existing islands of living epithelium. Many such islands arise from the hair follicles and sweat glands which penetrate deeply into the corium.

At present the most widely used cover for the prepared burned surface is some form of coagulum, such as tannic acid, gentian violet or other substances. While the coagulation treatment gives many excellent results, the use of this type of dressing has some disadvantages which include possible destruction of some viable epithelial elements, and imprisonment beneath the crust, of microorganisms which may produce infection. Where infection results from either inadequate surface preparation or from the use of this method in burns not properly treated within the first few hours, and where contamination of the surface has been followed by bacterial invasion, the presence of the coagulum and the time required for its sequestration and removal delays the healing process. The coagulation methods are also objectionable from the standpoint of the nursing care required in the tanning process and the staining of linens. An alternative method is described which avoids these objections and which in our hands has given excellent results.

#### METHOD

The surgically prepared burned surface is first overlaid with strips of sterile scarlet red bandage\* which extend considerably beyond the limits of the burn, or in the case of an extremity, may encircle the limb. Over this is laid a massive sterile pad composed of gauze and cellucotton which is moistened before application with a freshly boiled one to one and one-half per cent solution of sulfanilamide in water. Such solutions, being supersaturated, precipitate out in the dressing at room temperature. The moistened pad is applied after it is sufficiently cool and is covered with waxed paper and bandaged in place with an elastic bandage prepared by slitting two inch stockinette. This type of bandage furnishes a mild and comfortable compression, adapts itself well to the configuration of the parts, stays securely in place and lends itself to repeated use after laundering. Adhesive strips may be used to help anchor the finished dressing.

The parts so prepared, covered and bandaged are left undisturbed until healing of areas of second degree burn is complete unless systemic or local evidences of infection occur. In previously

healthy individuals burns uncovered eight to ten days after the original dressings may be found to be healed completely except in areas of third degree involvement. At the time of the first dressing the outside wrappings are removed, the margins of scarlet red bandage secured by the fingers at the edge of the large dressing and this peeled back while the scarlet red bandage is kept under gentle counter tension. This prevents separation of the scarlet red bandage from the underlying surface.

If healing of the burned surface is complete at this first change of dressings the scarlet red bandage will be found to be dry and it can be carefully removed. If, however, the central area is moist it is indicative of incomplete healing. Examination of the moist surface will disclose the character of the wound secretion and if this is not obviously purulent the scarlet red bandage is not disturbed and a second massive dressing moistened with sterile sulfanilamide solution is applied as described above and left for several additional days.

Obviously infected areas encountered in any stage of the management are treated by direct application of the moist sulfanilamide dressing to the wound and the maintenance of some degree of pressure on the parts by incorporating moistened sea sponges or a layer of sponge rubber in the bandage. The dressings are changed daily until the wound appears clean after which the scarlet red bandage may again be used if the areas to be covered by ingrowth of epithelium are three-fourths of an inch or less in width.

Early grafting materially reduces the period of disability and the extent and depth of scar tissue formation and its resulting disability. Grafting can be accomplished as soon as healthy flat granulations are present which bleed easily and are free from pus when daily moist dressings are changed. A satisfactory general condition of the patient including proper hemoglobin levels and erythrocyte count should precede any attempt at skin grafting if a high percentage of "takes" is to be expected, and, where required, transfusions should precede grafting. The choice of grafting methods will depend upon the experience of the surgeon and the importance of the cosmetic result. Thiersch grafts or grafts of intermediate thickness furnish the best cosmetic results but require more experience in their successful application than the pinch grafts commonly used. The cosmetic results however are sufficiently superior to warrant their more extensive use. Where facilities for Thiersch grafting are not at hand and in locations where the cosmetic result is relatively unimportant the use of pinch grafts is greatly preferable to permitting a

\*Scarlet red bandage may be prepared by placing a two inch bandage on end in an ointment jar, putting four level teaspoonsful of scarlet red ointment on the upper end and autoclaving in an upright position. If properly prepared the finished bandage should be evenly impregnated with the ointment without occluding the meshes.

granulating area of greater diameter than a quarter to heal in by cicatrization and proliferation of epithelium from its margins.

#### CONCLUSIONS

A favorable experience in treating fresh burns by surgical cleanliness, and the use of scarlet red bandage overlaid with sterile dressings saturated with a freshly boiled solution of sulfanilamide is reported. The burns observed healed rapidly and without the necessity of changing the dressings before areas of second degree burn could be epithelized.

The method described utilizes the principles of surgical asepsis, provision for prolonged drainage by capillarity into a moist dressing, the recognized stimulant action of scarlet red on epithelial growth, the bacteriostatic action of sulfanilamide and the desirability of a degree of splinting and mild compression in the processes of repair.

Infected burns or burn granulations respond favorably to the direct application of sterile wet dressings saturated with a solution of sulfanilamide.

Some type of skin graft should be employed as early as healthy granulations can be obtained in areas of third degree burn.

#### CASE REPORTS

Case 1. P. A. On May 18, 1940, a farmer thirty-seven years of age, was burned about the hands and wrists in a gasoline fire which occurred when a cup of gasoline he was using to prime his tractor ignited when the tractor backfired. To extinguish the flames he rubbed his hands in the loose dirt of the barnyard and presented himself for treatment within a few minutes thereafter. On examination both hands presented extensive areas of second degree burn with the superficial epithelium hanging in large sheets from the palms and with the underlying surfaces black with barnyard soil. A preliminary dose of morphine was given and the initial cleansing was accomplished by the use of sterile soap solution. Because the dirt was so thoroughly rubbed into the burns a short evipal anesthetic was administered to permit adequate cleansing of the surfaces. These were washed repeatedly with gauze sponges and sterile soap solution until they were red and clean. They were then covered by scarlet red bandage, a wet sterile sulfanilamide dressing, waxed paper and compression bandage as described. Each finger was individually wrapped with scarlet red bandage, and a gauze dressing and the whole hand was then encased in the large dressing. Eight days later the primary dressing was removed. All areas were

completely epithelized and the patient substituted a soft cotton glove for the dressings and used an emollient to prevent cracking of the tender epithelium for a few days.

Case 2. On May 18, 1940, Paul A., eight years of age, sustained burns involving the left side of the face and scalp, left arm, left side of body and left thigh when a cup of flaming gasoline was accidentally thrown from the hands of his father. The patient was rolled in the loose dirt of the barnyard to extinguish the flames. Approximately one-half hour later general and local treatment was administered as described for Case 1, except that because of the extensive involvement hospitalization and special nursing were provided, and parenteral fluids were supplied. Eight days later the primary dressings were first changed. At this time there remained small moist areas of third degree burn presenting a clean appearance on the left thigh and about the left ear. These areas were redressed as described at two to three day intervals until completely healed on July 8, 1940. The healing time could have been shortened if the parents had consented to the use of grafts.

Case 3. Mrs. S., a housewife, twenty-nine years of age, on October 7, 1940, lost control of a hot water hose with which she was filling her washing machine and sustained burns involving areas on the lateral aspect of the trunk and upper portion of the left thigh. She came immediately for treatment and the burned areas appeared perfectly clean. After a preliminary opiate the areas were carefully washed with metacaine, two per cent and sterile soap solution, and loosened epithelium was removed by means of forceps and sterile gauze sponges. The burned surfaces were then covered as described with scarlet red bandage, moist sulfanilamide dressing, waxed paper and an elastic bandage. All areas were completely epithelized at the initial change of dressing eight days later.

Case 4. On June 17, 1940, R. D., a boy eleven years of age, in jumping from the rear of a moving truck to the concrete highway sustained multiple brush burns of the head and extremities. Because the dirt was ground into the parts a short general anesthetic was administered for the cleansing process after which they were individually covered as described for burns. The patient reported subsequently to his local physician who stated that healing occurred without infection.

Case 5. On March 29, 1941, S. J., two years of age, sustained a second degree burn of the left side of the face when she fell against a heating stove. The burned surfaces were prepared and covered as described with scarlet red bandage, moist sulfanilamide dressings and waxed paper and incorporated in a head bandage of cut stockinette.



Healing was found to be complete when the child loosened the bandage at five days after the primary dressing because of itching due to an irritation of adjacent skin surfaces behind the left ear.

Case 6. On December 23, 1940, L. M., twenty-one years of age, a waitress, reported for treatment of a hot grease burn of the right foot sustained December 7, 1940, which had been treated with tannic acid. On examination there was obvious infection beneath the crust which was beginning to separate. Daily moist sulfanilamide dressings were instituted and the crust was removed over a period of several days after which the same dressings were continued until clean granulations were obtained and the area was then covered by pinch grafts.

Case 7. On July 19, 1940, J. S., a housekeeper, forty-four years of age, sustained second degree burns involving her left thumb, forefinger and adjacent portions of the hand when she mistook gasoline for kerosene in kindling a fire. She extinguished the flames with sand, applied unguentine locally and delayed reporting for examination until six hours after the accident. Following initial cleansing and debridement with ether and sterile soap solution, the parts were covered with scarlet red bandage, moist sulfanilamide dressings, waxed paper and a compression bandage. When this dressing was first removed eight days later the area was completely epithelized.

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## INTESTINAL OBSTRUCTION IN THE FOURTH MONTH OF PREGNANCY DUE TO ADHESIONS.

F. A. HANSEN, M.D., Red Oak

There are less than seventy-five articles published in the English language on intestinal obstruction in pregnancy, labor and the puerperium. The world literature contains over one thousand references to ileus in pregnancy, according to Slemons and Williams<sup>5</sup> who give a bibliography of 139 references. The first case in English was reported by Houston<sup>4</sup> of Dublin in 1830. J. Whitridge Williams,<sup>8</sup> with an experience of 30,000 deliveries, mentions two cases, both due to tuberculosis. DeLee<sup>2</sup> also mentions two cases, both due to adhesions from an old appendicitis, and gives a brief discussion of ileus in the pregnant woman. Weintraube and Jaffe<sup>7</sup> recently reported three cases occurring in the antepartum period in 32,000 deliveries at Israel Zion Hospital, and a fourth case which occurred in the postpartum period.

For reasons as yet controversial, intestinal ob-

struction is most frequent in the fourth and fifth months, and in the eighth and ninth months. In the second trimester, the uterus is rising out of the superior straight, placing tension on any existing adhesion. The appetite of the mother has suddenly increased. In the eighth and ninth months, the head of the fetus descends into the pelvis, and the greatly enlarged uterus encroaches upon the other abdominal viscera. Potential causes for obstruction such as mechanical bands, abnormally long mesenteries, etc., may become activated because of changes brought on by a growing pregnancy and by the increasing pressure and changes in position of the pelvic and abdominal viscera which continue through pregnancy, labor and the puerperium.

In addition, the true "pregnancy ileus" of the German authors, that is, intestinal obstruction caused solely by a normal growing pregnant uterus, has been recognized as a clinical entity. Forty-eight such cases have been reported and Eliason and Erb<sup>3</sup> collected twenty-eight which were cited in the period from 1926 to 1937. In this condition, ileus appears in the last trimester as the lower uterine segment enlarges and crowds the sigmoid against the pelvic brim. Texiere originated a special regime of treatment for pregnancy ileus by changes of position and enemas, to be tried before resorting to surgery.

The classification of the 84 cases recorded in English is as follows: strangulation, 37 (44.04%); volvulus, 14 (16.66%); intussusception, 9 (10.71%); pregnancy ileus, 5 (5.95%); abdominal pregnancy, 4 (4.76%); strangulated hernia, 2 (2.4%); tumor, 2 (2.4%); miscellaneous, including holes in the mesentery or broad ligament, mesenteric thrombosis, foreign bodies, congenital malformation of the uterus, hydrocephalus, etc., 11 (13.08%). The most common pathology is strangulation by a peritoneal band, usually across the terminal ileum. The small bowel is strangulated three times as often as the large.

In roughly one-fourth of the cases there is a history of a previous operation, and the same proportion holds for adhesions from former operations, usually appendectomy or pelvic surgery. The age of the woman and the number of children appear to average about the same as in any large group of obstetric patients: the youngest was nineteen and the oldest was forty-three years of age; the average was thirty years of age. Of the reported cases 43.6 per cent were primiparas and the average was pregnant for the second time. Of 80 women, 22.5% were in the ninth month, 17.5% in the eighth, 16.25% in the seventh, 13.75% in the fifth, 11.25% in the sixth,

8.75% in the postpartum, 5% in the third month, 3.75% in the fourth, and 1.25% in labor.

In 63 cases in which symptoms are mentioned, the cardinal symptoms of intestinal obstruction appeared in this frequency: pain, 87.3%; vomiting, 79.4%; obstipation, 61.9%; distention, 60.3% and nausea, 17.5%. As a rule, in the earlier stages, the pulse and temperature are normal or subnormal. As time passes, increasing peritoneal irritation is accompanied by a rising leukocyte count. The abdominal distention is greater than one would expect for the stage of pregnancy. Application of the stethoscope may reveal the peristaltic sounds of obstruction, from borborygmi to distant metallic tinkling. On palpation, occasionally intestinal loops or a tender, more or less firm mass may be mapped out. A mass in the cul-de-sac may be felt on rectovaginal examination. The extreme tension of the abdominal wall in the last months renders examination more difficult. Peritonitis and septicemia are the chief complications, and death of the fetus or the onset of labor is not uncommon. Operative trauma, and especially peritoneal irritation by infected exudate, jeopardize the fetus. In the presence of infection the fetus usually dies or is delivered by the onset of labor. A positive diagnosis may be made in the presence of pain, vomiting, constipation and local and general signs of obstruction, with a history indicating a possible etiologic factor. Gas patterns (paralleling) in the bowel on x-ray examination, and a barium enema may be of great assistance.

One of the conditions to be differentiated<sup>1</sup> from ileus is pseudo-occlusion due to pressure by the engaged fetal head, with simple constipation during the postpartum period, with headache, a slight temperature and distention but no abdominal pain or infectious signs. In pernicious vomiting of pregnancy there are no general symptoms and the abdomen is retracted instead of distended. In beginning labor, there is no sudden severe pain, usually no vomiting, the uterus is contracting and the cervix softening. In labor, the diagnosis may be difficult, and such symptoms may be due to rupture of the uterus, with intense local pain, a bloody vaginal discharge, the fetus perhaps more easily palpable, the uterus not mapped out abdominally as easily and not contracting, and with a small pulse and subnormal temperature or even signs of shock and collapse. Appendicitis may offer difficulty, since the location of the appendix may vary with advancing pregnancy, but the history of similar attacks, the type and location of the pain aid in differentiation<sup>6</sup>. Strangulated hernia is not common in pregnancy,

but usually a tumor at a hernial ring is present, with nausea, vomiting and great local tenderness. Torsion of a cyst pedicle also is difficult, but there is usually no history of factors which might bring on an ileus, usually no constipation or vomiting early, and the local signs may be distinctive. Hematuria and the radiation of the pain, the absence of constipation and vomiting should distinguish the pain of ureteral colic from obstruction of the intestine. In peritonitis the constipation is usually incomplete, vomiting and diarrhea may be present, chill, fever, rapidly generalizing pain and distention are usually present and the history may indicate the etiologic factor, especially appendicitis.

The mortality rate varies from 54 per cent of the mothers in 95 cases previous to 1913, to 21 per cent in 66 cases from 1926 to 1937.<sup>3</sup> The fetus was lost in 75 per cent of the cases in the earlier series, and 50 per cent in the recent series. In the cases recorded in English, 25 or 31.25 per cent of the 80 mothers perished, and 36 or 57.1 per cent of the fetuses died. Prior to completion of the seventh month, the fetus was lost in 70.76 per cent, and in the eighth and ninth months, the fetal mortality rate was 41.38 per cent.

Early recognition of a surgical emergency, with prompt surgical intervention offers the only hope of lowering the mortality rate of this grave complication of childbearing. In the case of obstruction in which the occlusion is found to be in the region of the sigmoid, the routine recommended by Eliason and Erb, who reported three cases of their own, is applicable, namely, a high enema with the patient in the knee-chest position. If there is no relief, a laparotomy may be performed and the lesion corrected. If at operation the obstruction is due to a true pregnancy ileus and the fetus is viable, a cesarean section is indicated. If the fetus is not viable, one should try to manipulate the uterus. If there is then no relief and there is no cause other than the pregnancy, the uterus should be emptied from below. If no other cause is found by laparotomy and it is not desirable to empty the uterus, one can insert a long rectal tube, manipulating it into place intra-abdominally.

#### CASE REPORT

J. C. H., twenty-four years of age, four and one-half months pregnant, was examined at 5:00 p. m., complaining of epigastric pain of one hour's duration. The pain was very severe, cramping, persistent and did not radiate. Severe cramping attacks occurred every few minutes. At noon she had felt well and had eaten a hearty meal. In



an effort to secure relief she had induced vomiting with no effect on the pain. She had had a bowel movement at 2:00 a. m. and two soft-formed stools since noon.

She had her last menstrual period four and one-half months ago, had been taking mineral oil for moderate constipation, but had been well until the present illness. She had been married four years. Her first pregnancy resulted seven months ago in a left ectopic pregnancy, for which the fallopian tube and mass were removed. The present pregnancy was her second. Six years ago she had a six-week attack of acute inflammatory rheumatism, with no permanent effects. The family and system history revealed nothing relevant. A vaginal examination three months ago revealed a one-month pregnancy, no masses in the adnexae and no pelvic pathology.

The patient's temperature was 97.6 degrees, pulse 66, respirations 20. The head and chest were negative except for a mitral murmur. A midline scar was present below the umbilicus. The abdomen was not distended, the fundus of the uterus lay at about two fingers' breadth above the symphysis pubis, and the uterus was not tender or contracting. Moderate tenderness was present throughout the right upper and lower quadrants and no masses were palpable. There was no rigidity. No peristalsis was seen, but occasional gurgling sounds could be heard through the stethoscope. Vaginal examination revealed no discharge, a soft, enlarged cervix, a pear-shaped non-contracting uterus the size of a four and a half months' pregnancy, and no masses or tenderness in the adnexae. On bimanual examination no mass was felt, but there was marked tenderness to palpation in the region of the cecum.

At 5:00 p. m. the leukocyte count was 16,900 and the urine negative for albumin or blood. Because of extreme pain, morphine sulphate gr. one-quarter was given hypodermically. This lessened the pain and the patient was more comfortable, although the pain was "still there." In about fifteen minutes undigested food was vomited. The patient was moved to the hospital at 7:00 p. m. A small amount of clear fluid was vomited at 8:00 p. m. The pain was severe and now located in the right lower quadrant and umbilical region. A soapsuds enema was returned clear and gave no relief. The leukocyte count at 9:00 p. m. was 16,000. The pain continued and at 11:00 p. m. the leukocyte count had risen to 23,000.

The diagnosis was not clear, but was thought to be acute appendicitis, twisted ovarian cyst or intestinal obstruction. The patient was oper-

ated upon at midnight. When the peritoneum was incised, a clear sanguinous fluid appeared. The appendix and uterine adnexae appeared normal. The pregnant uterus was about the size of a honeydew melon and appeared normal. Loops of small bowel exposed in the field were distended, lusterless, dark purple and covered with hemorrhagic spots. Tense, constricting bands could be felt in the midline deep in the pelvis. Two loops of strangulated ileum, each about fourteen inches long, were delivered. The constrictions were caused by two stout flat bands about one centimeter wide. One was attached at each end to adjacent coils of ileum and the other attached at one end to the ileum and at the other to the posterior surface of the uterus just above the cervix, holding the strangulated mass low behind the uterus. The bands were ligated and cut, and the freed bowel, after packing with warm saline pads, regained circulation and color. The wound was closed in layers without drainage.

A Wangenstein duodenal suction tube was left in place for four days and 3,000 cubic centimeters of ten per cent glucose given intravenously daily. The patient recovered uneventfully and had a normal delivery at term. Seven months later she again became pregnant and had a normal pregnancy and delivery.

#### CONCLUSIONS

1. A case of intestinal obstruction in pregnancy is reported, and the English literature reviewed.
2. Ileus occurs most frequently in the middle or last months of pregnancy, and is most often due to peritoneal bands from former operations strangulating the small bowel.
3. The mortality rate for the mother is 21 per cent to 54 per cent, and for the fetus 50 per cent to 75 per cent.
4. Diagnosis of a surgical emergency must be made early for successful treatment.

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**Note:** A complete bibliography will be included in the author's reprints of this article.

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## LYMPHOGRANULOMA INGUINALE VENEREUM

The Fourth Venereal Disease

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This paper is given with a view of clarifying terminology applied to a specific disease entity. Lymphogranuloma inguinale venereum is characterized by a low grade inflammation of the inguinal and perirectal lymph glands. It is practically always venereal in origin, mainly affecting adolescents, and is shown to be due to a filtrable virus.

Shaffer and Arnold<sup>1</sup> claim that the prevalence of this disease is increasing rapidly but modify the statement by attributing the increase not to a wider dissemination of its causative agent, but to an increased recognition of the disease by the use of Frei's<sup>2</sup> antigen. Van Cleve,<sup>3</sup> in speaking of this disease, says, "It should be handled with the same scientific methods and control as are gonorrhea and syphilis," and expresses a hope that the medical profession will become more interested so that fewer cases will pass undiagnosed.

With ideas of determining to what extent this disease prevails, and to emphasize the signs, symptoms and other means by which it may be recognized, the following assemblage of pertinent facts is presented. The essayist makes no claim of originality or actual research. The controversies herein recited merely reflect what appear to be the variations and range of opinions.

That this disease is caused by a filtrable virus has been definitely established. It is spread via the lymphatics and possibly by the blood stream. The various names, such as, climatic bubo, tropical bubo, strumous bubo, Esthiomene, Nichols-Favre disease, subacute periadenitis, subacute inguinal lymphadenitis, lymphopathia venerea, and lymphogranulomatosis inguinalis, have caused many people to believe that several different disease entities were involved. The name lymphogranuloma inguinale venereum has been officially adopted by the American Medical Association.

The onset of the disease in humans is usually characterized by a small initial inoculatory lesion of the genitalia, usually on the glands penis or in the urethra in the male, and on the external or internal genitalia in the female.

The history of the initial lesion is difficult to elicit because of its evanescent nature. The lesion generally appears from three to ten days after exposure through sexual relations. It may be of four types: herpetic, ulcerative, nodular, or of a

specific urethritic variety. All of these lesions may be transitory and may escape notice by the infected person. This is followed, from eight to thirty days after the exposure, by an inflammatory swelling of the regional lymph nodes, with involvement of the adjacent connective tissue and lymphatics. Constitutional symptoms then appear which include lassitude, headache, fever, sweats, anorexia, loss of weight, arthralgias, transient rash and skin eruptions such as erythema multiforme and erythema nodosum.

In the male, the adenopathy is localized in the inguinal region. In the female, the drainage is most likely to be through the endopelvic fascia and is much more likely to produce the so-called genito-anorectal syndrome. This syndrome consists of a narrowing of the lumen of the rectum resulting in anal stricture. It is present in approximately 50 per cent of the cases of lymphogranuloma inguinale. These lesions have been classified into four types: first, a pure stricture limited to the rectum; second, rectal stricture with elephantiasis of the external parts; third, rectal stricture complicated by fistulas (formerly these were often classified as tuberculosis even in the absence of Koch bacilli); and fourth, rectal stricture with pelvic cellulitis.

The recognition of lymphogranuloma inguinale as being a specific disease of venereal origin is made possible by the now universally known Frei test.

### DIFFERENTIAL DIAGNOSIS

Granuloma inguinale may be confused with lymphogranuloma inguinale. However, the former is a skin and subcutaneous disease of venereal origin, similar in name only, which gives a negative Frei test and whose lesions show the presence of Donovan bodies. The differential diagnosis from syphilis involves a history of chancre, evidence of its past existence, the fact that the nodes in syphilis are sharply defined, and the glands are hard, painless and do not tend to suppurate. In syphilis, the Wassermann test is usually positive. A dark-field examination of serum from the gland should reveal the presence of *Spirocheta pallida*. Pyogenic infections will be ruled out by a positive Frei test and the fact that they are not of venereal origin. Definite finding of tuberculosis clinically, or on sections of the involved glands, will differentiate this as a causative factor. A "suspicion arouser" which should be borne in mind at all times, is any inguinal adenopathy with or without a history of any genital lesion, and, especially in the female, the presence of any and all rectal or anal strictures. Primarily, this disease is associated with a low economic status, and in southern localities represents an endemic infection of the poorer



classes, chiefly of the colored race. D'Aunoy<sup>4</sup> and his colleagues made a study of 294 patients, only 9.8 per cent of whom were white; the youngest patient was a thirteen year old colored girl, and the oldest a colored woman ninety-four years of age. The cases reported throughout the literature in general have about the same characteristics.

In making a diagnosis by the use of Frei antigen, one should always remember that the Frei test usually does not become positive before ten days and it may be as long as thirty days before this disease can be ruled out. Almost equally important is the fact that if the person has had this disease years before, they might still have a positive Frei reaction as a result of the old infection. A Frei antigen is obtainable from biologic supply houses and the method of injection is usually about as follows: one-tenth of a cubic centimeter of the antigen is injected intradermally and the injection site examined in from forty-eight to seventy-two hours. A positive test is characterized by a red, hard papule surrounded by an erythematous ring. In the presence of a recently or concurrently acquired syphilis and during the course of anti-syphilitic treatment, the Frei test may be temporarily negative. The period of incubation is irregular and confusing. In the male, two periods are recognized. The first, between coitus and a primary lesion, varies from three to fifteen days; the second, between coitus and the occurrence of adenitis, varies from ten to thirty days. The initial lesion ranges from the size of a pin-head to that of a split pea. It is painless and heals without a scar.

The question of treatment is still somewhat arbitrary. Intravenous injections of sterilized Frei antigen have been used with a certain degree of success. Some writers claim that excision of the inflamed glands and tight closure without drainage is the method of choice. Other forms of treatment therapy, ultraviolet ray, foreign protein and arsphenamine have been used. They have met with very little success. Hot baths and diathermy have been beneficial in a few cases. There is an outstanding conflict in the literature as to the efficiency of tartar emetic. All of the commonly accepted methods of treatment have been more or less unsatisfactory. The introduction of sulfanilamide has opened a new avenue of approach. Shaffer and Arnold<sup>1</sup> reported its use, and claim that it certainly merits further trial, inasmuch as this disease has been so notoriously unresponsive to other methods of treatment. The investigation and exploration of rectal complications should be approached with great caution inasmuch as the possibility of serious damage is ever present.

A survey of over 3,000 cases reported in

1939 and 1940, shows a remarkable amount of variation in the deductions. In fact, the conclusions in several cases seem to be in total discord. Practically all of the authors who discussed treatment seem to think that sulfanilamide is the treatment of choice. The treatment of rectal complications with this drug averaging 75 grams per patient and ranging from 54 grams to 108 grams, was efficacious (in Shropshear's<sup>5</sup> series) in 100 per cent of early cases. The treatment of subacute and chronic rectal complications has been satisfactory in a fairly high percentage of cases.

The State Department of Health desires to remind the physicians throughout Iowa that this disease is reportable on the venereal disease report forms.

#### SUMMARY

The consensus of opinion might be summed up in the following points:

1. Lymphogranuloma inguinale venereum has been given very intensive study during the past two years and has now come to be recognized as a generalized disease.

2. It is a definite disease of venereal origin and has a possibility of grave consequences.

3. It should be considered in all cases of inguinal adenopathy, especially where the involvement is predominately unilateral, and where there is a matting and tenderness of the glands.

4. The presence of an ulcer about the genitals should not designate the case as syphilis or Ducrey infection, necessarily, although the three possibilities must be carefully considered.

5. The development of fistulous tracts from lymphopathic glands, especially should lead one to consider lymphogranuloma inguinale venereum. Smears and skin tests should be made as well as repeated serologic examinations.

6. The treatment of choice should be medical rather than surgical.

7. The disease can no longer be regarded as climatic, racial or rare.

8. This disease is reportable on the venereal disease report forms of the Iowa State Department of Health, and it is hoped that the foregoing may serve as a stimulus for physicians more thoroughly to investigate cases with suggestive symptoms or signs in the hope that more cases will be reported.

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## CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

### SOME CLINICAL OBSERVATIONS OF ACUTE POLIOMYELITIS

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There can be little doubt that the vast majority of adults develop immunity to poliomyelitis through an exposure during childhood to this disease in an obscure form, although the theory might be advanced that most commonly the immunity-conferring process might have been mistaken for the influenzal syndrome. Varying from one epidemic to another, the manifestations of this important central nervous system disease (acute poliomyelitis) are protean. The inaccuracy of pediatric histories generally has its usual important rôle in the evaluation of the symptomatology and time intervals which are involved. This fact is considered in the presentation of points of interest to be noted as the result of collection of data from one hundred cases of "infantile paralysis" observed here in the past eighteen months.

It is only in the remission form of onset that one can easily divide the symptoms which are referable to systemic invasion by the poliomyelitis virus from those which indicate localization of the organism in the central nervous system. The two common types of onset are indicated as the remission and the non-remission forms, and the term "dromedary" is avoided because of its erroneous meaning when applied to the disease under discussion. The general symptoms from point of view of frequency are listed in Table I.

TABLE I—Relative Frequency of Symptoms Experienced by One Hundred Patients with Acute Poliomyelitis.\*

Symptom	Number
Fever	81
Headache	60
Stiff neck	56
Weakness	54
Vomiting	37
Nausea	35
Anorexia	31
Upper respiratory infection	30
Back pain	19
Pain in extremities	19
Drowsiness	13
Dysphagia	10
Constipation	8
Abdominal pain	7
Respiratory distress	7
Bladder (retention) disturbance	5

On the basis of one hundred cases of acute poliomyelitis, the types of onset were distributed as follows: non-remission type, 61; remission, 36; and insidious, three. The non-remission form of

onset is marked by the appearance of symptoms usually moderately severe in degree and with either progression to paralysis or recession without residual damage in a period of one week, although the majority of cases of this type will run the active course of their disease in from two to six days. Central nervous system signs appear early so that in three or four days the meningeal syndrome is usually prominent.

Case 1. S. S. was nine years of age when she was first seen here. Her previous health had been good. On December 5, 1939, she complained of backache, headache and loss of appetite. Two days later fever was noted as well as increasing generalized weakness. On December 8 there began progressive paralysis which terminated in bulbar signs and quadriplegia.

Case 2. I. B. was nine years of age on first admission. On August 7, 1940, she experienced headache and fever. The next day spinal stiffness developed and the fever persisted. Four days after onset of illness the right upper extremity became limp. The next day weakness was noted in the lower extremities.

The remission form of onset of the disease is characterized by a two peak sequence of events.

Case 3. W. P. was ten years of age. On August 13, 1940, he complained of sore throat, and fever was moderate in degree. Three days later he improved and felt well until August 19, and late that day he experienced headache, generalized weakness and stiffness of the neck. His right lower extremity had become paralyzed on August 22. (Note the onset of paralysis on the ninth day following first symptoms.)

Case 4. D. S. was fourteen years of age. On August 19, 1940, he became ill with anorexia, weakness, pallor, headache and fever. The next day he improved and he was well until August 24, and at that time he had a recurrence of the above symptoms. Two days later he complained of weakness and pains in the extremities and on August 27 he began to have respiratory distress.

In the remission form of onset, it is common for the systemic disease (upper respiratory infection or gastro-intestinal upset) to be followed in from five to seven days by recurrence of complaints, the second period of disease having been preceded by a period of improvement. Paralysis or recovery very frequently occurs within three days after first evidence of meningeal irritation, the latter always occurring in the second peak. Average duration of the various time intervals are as follows:

Initial symptoms	59 hours
Remission	80 hours
Meningeal symptoms to paralysis	35 hours
Meningeal symptoms to recession	96 hours

\*The inaccuracy of such compilation is obvious since young children do not complain of headache, and often when no history of sore throat was elicited, subacute tonsillitis was found on examination. Possibly, the first three items should exceed ninety per cent.



The insidious type of onset is unusual. One four year old girl was said to have fallen and injured her knees two weeks prior to onset of paralysis of the right lower extremity. No intervening symptoms could be elicited; however, the child showed evidence of active throat infection on admission. General symptoms from point of view of frequency are little different in the two major types of onset.

Clinically, we have found it helpful to think of patients on the basis of the level of involvement. Such a division is justified only if unusual pictures are kept in mind, as well as the fact that poliomyelitis is a disseminated central nervous system disease. Peripheral manifestations of central injury are referable to areas of greatest damage, and there is little doubt that even in non-paralytic cases, diffuse damage occurs, but is too minimal to result in localized paresis. Unusual types of the disease have their importance purely from the point of view of differential diagnosis. On the basis of level of involvement our patients may be divided as follows:

Acute (polio) meningoencephalitis.....	9
Bulbar and bulbospinal.....	10
Acute poliomyelitis (spinal).....	63
(Non-paralytic) .....	18

Acute polioencephalitis as such is an unusual disease and this is even more true when it is complicated by spastic paralysis. Minimal cerebral changes occur no doubt in every case of acute poliomyelitis but as has been mentioned before, the damage is too slight to result in clinical signs. Theoretically, pure polioencephalitis should differ in no way in its manifestations from acute encephalitis of any other type. Usually, headache occurs, along with clouding of the sensorium, drowsiness, hyperreflexia, pyramidal tract signs, and even the convulsive state. Differentiation between polioencephalitis and epidemic encephalitis is usually not possible by clinical means. Von Economo's triad of symptoms described in epidemic encephalitis (ophthalmoplegia, asthenia and somnolence) is as applicable to one disease as to the other. It is our impression that acute polioencephalitis tends to be benign in its residual injury. Facial weakness, dysphagia and ocular palsies will usually disappear rapidly, and evidence of mental deterioration as a sequela would be exceedingly rare. The reverse is true with epidemic encephalitis.

Acute polioencephalitis in pure form was not observed here but the criteria for the diagnosis of this entity were satisfied by the condition referred to as (polio) meningoencephalitis. In each instance, the meningeal reaction was so marked that

the patient appeared to be afflicted with meningitis. Great difficulty may be experienced in the differential diagnosis between the two diseases. The necessity for early administration of serum in cases of meningococcic meningitis is great and once intrathecal serum has been administered, the spinal fluid can no longer be relied upon as a diagnostic aid, because it will in a short period of time show an increase of cell count to a high level due to the aseptic meningitis created by the serum.

The bulbar form of poliomyelitis must be differentiated from the spinal type with a high cervical level. Severe respiratory oppression can be a part of the picture of either. Only one case of pure bulbar disease was observed here, the others (nine in number) all having been bulbospinal in distribution. An outstanding feature of true bulbar involvement is glossopharyngeal nerve palsy, and the other characteristic manifestations have been involvement of the sixth, seventh and tenth cranial nerves, as well as central injury to respiration and circulation as evidenced by arrhythmias. In the pure bulbar instance mentioned above, dysphagia and nasal speech constituted the temporary difficulty and recovery was uneventful. One of the children with the bulbospinal form of disease recovered following prolonged convalescence in the respirator; however, the other eight children succumbed to respiratory paralysis.

The spinal form of the disease constituted about 63 per cent of all patients, but was the basic type in 76 per cent of patients developing paralysis in any degree. Classically, one thinks of paralysis of varying degrees of severity and distribution frequently accompanied by hyperesthesia, and hyporeflexia to areflexia in the involved extremities are common, while sensory changes are rare. Such a concept is acceptable except for the matter of diminished deep reflexes. The process of loss of reflexes is not variable with regard to the final result; however, we have observed several instances in the early stage at which time the deep reflexes were found to be hyperactive. It must be added that hyperactivity of deep reflexes is most likely to be found in patients with severe meningeal signs. In the period of the acute stage when central nervous system damage becomes established, the deep reflexes in the involved parts are lost through disruption of the deep reflex arc. Abdominal reflexes, long regarded in their absence as evidence of pyramidal tract disease, are rarely disturbed unless, of course, the abdominal musculature is paralyzed. The localization of paresis or paralysis to the various muscle groups is shown in Table II.

There is probably little laboratory assistance to be found in the diagnosis of acute poliomyelitis

with the exception of study of the spinal fluid, and particularly the spinal fluid cell count. Much in opposition to what is usually written about increased intrathecal pressure, we found that the spinal fluid pressure is so rarely abnormal in un-

TABLE 11—The Distribution of Involvement in 100 Patients with Acute Poliomyelitis.\*

Localization	Number of Patients
No paralysis	18
Strabismus	2
Facial	2
Bulbar	1
Bulbospinal	9
One upper extremity	8
Both upper extremities	3
Abdominal muscles	32(?)
One lower extremity	19
Both lower extremities	22
Hemiplegia (flaccid)	2
Quadriplegia without respiratory difficulty	8
Quadriplegia with respiratory difficulty	5
Spastic (one extremity)	2

complicated cases that its elevation caused us to regard it with concern as a point of prognostic significance. The qualitative globulin test varied markedly and the occasional great increase in globulin was not related to the severity of the disease or to the total cell count. It was not possible to correlate the findings of the colloidal gold (Lange) test.

The lumbar puncture performed during the period of systemic invasion will mislead the observer by revealing negative findings. For the most part, signs of meningeal irritation must be present before pleocytosis can be demonstrated. When meningeal signs are in evidence (cervical stiffness and positive Kernig's sign), the spinal fluid will usually contain an increased number of cells. That this is not invariable is shown by the fact that several of our patients had no increase in spinal fluid cell count (less than eight cells for each cubic millimeter of spinal fluid) although the central nervous system disease was in its early phase and clinically obvious. Likewise, lumbar puncture may prove misleading if the procedure is done a few days after meningeal irritation has subsided. Cell counts in our patients ranged from zero to 720 with an average of 96 for the 88 patients on whom spinal puncture was performed.

The blood counts add nothing in the way of diagnostic assistance. The leukocyte count varies from normal to 15,000 cells for each cubic millimeter of blood and often there is a relative increase in the number of polymorphonuclear cells.

The prognosis in any case of acute poliomyelitis must be considered from three distinct angles.

\*It must be emphasized that the above data refer to the acute disease, and some of the patients with extensive although mild degree of paralysis showed remarkable recovery in a period of two to three weeks. For example, strabismus and facial palsy had disappeared completely by the time the four patients so affected had left the service. It is of interest to note that while it is thought about eighty per cent of patients who contract acute poliomyelitis progress only through the systemic phase and then abort the disease, progression to the meningeal phase will cause the figures to reverse, so that actually possibly eighty per cent who develop central nervous system signs will fall into the paralytic class.

First, the possibility of bulbar damage with probable death must be considered regardless of the apparent mildness of the affliction. Second, what are the chances of peripheral paralysis? Third, paralysis of paresis having occurred, what is the possibility of return of function? The third point can be dismissed quickly since it falls into the domain of orthopedic surgery. It is recalled that with the non-remission form of onset of poliomyelitis the course will usually be obvious within six days. With the remission type of onset, the first peak can be disregarded, since central nervous system signs are rarely evidenced during this period. The second peak can then be considered as the common non-remission form. In any child who has experienced systemic symptoms followed by meningeal signs (accompanied usually within three days by recession of the disease or by actual paralysis) the disease cannot be said to have passed the danger point until at least three days of freedom from fever have gone by. *Recession of fever is a favorable sign and occurrence or progression of paralysis during absence of fever is extremely rare. On the contrary, the persistence of fever is an ominous sign and speaks of persistence of activity of the process or of added complication.* The possible complications of acute poliomyelitis must in every instance be judged from onset of the central nervous system symptoms.

The fact that increased intrathecal pressure is unusual has been noted. In any case of acute poliomyelitis, moderate or severe increase of spinal fluid pressure is an unfavorable sign. In our experience, it has meant the presence of or impending bulbar involvement. One of our patients, who on admission evidenced minimal physical findings accompanied by fever, had a spinal fluid pressure of 400 millimeters of water preceding the sequence of events (acute ascending paralysis of Landry) which led to his death.

Whether or not a high cervical level of damage or true bulbar form of poliomyelitis is accompanied by respiratory difficulty and tachycardia, the failure of the pulse rate to return to normal after the patient has been placed in a mechanical respirator is believed to add extreme gravity to the prognosis.

The important points in the treatment of the afflicted child are for the most part referable to his comfort and maintenance of water balance of the body. Dysphagia contraindicates oral administration of food or fluids until it can be established that the difficulty is not due to glossopharyngeal palsy. At times, marked weakness and severe throat infection may give rise to dysphagia. When pharyngeal palsy is present, tube feeding has its dangers. We have been content to administer



fluids parenterally, adding adequate amounts of ascorbic acid and thiamin chloride. Dehydration with development of fever is likely to confuse the observer since this sign is so important in following the course of the disease. Muscular pains and hyperesthesias of severe grade are unusual so that little difficulty is experienced in control of bodily discomfort by codeine in appropriate dosage. Neoprontosil has not been used here in poliomyelitis; however, due to an error in diagnosis, sulfanilamide therapy was instituted in the treatment of five patients who showed marked meningeal signs. The drug occasioned much additional toxicity and all the patients improved when the drug was discontinued. Dehydration as a mechanism to reduce the spinal cord edema has proved unsuccessful in our hands. Serum has been given when obtainable but the results have been most unimpressive. The early administration of serum to patients to counteract a disease which has such a high incidence of recession in itself would make evaluation of its effect exceedingly difficult.

#### RECENT ADVANCES IN THE BACTERIOLOGY OF POLIOMYELITIS

WILLIAM M. HALE, M.D., Iowa City  
From the Department of Bacteriology  
State University of Iowa

During the past five years there has been a tremendous number of investigations on poliomyelitis. If the large number of investigations is taken into consideration, the really new developments in the bacteriology of poliomyelitis are conspicuous by their absence. In spite of this fact there have been some important contributions to the pathogenesis and virology of poliomyelitis. For thirty years investigators have worked with the so-called monkey passage strain, a strain of virus that has been maintained continually by passage from brain to brain of monkeys. It is not surprising that the virus passed in this manner should become fixed to the method of passage in exactly the same way as the fixed rabies virus which has been used for prophylactic immunization since the days of Pasteur. Many other viruses become fixed by intracerebral passage, which is admittedly an unnatural route.

It is not surprising that poliomyelitis virus, like rabies virus, after becoming so fixed loses its power to produce poliomyelitis in experimental animals, namely the monkey, when administered by the subcutaneous route. However, when the virus is administered directly into the central nervous system, it is highly pathogenic for this species. I stress this point because up until recently

all experimental work had been done with such a "fixed" strain of virus. It is with this strain that the investigators were working when they came to the conclusion that the only natural portal of entry was by way of the nasal mucosa and the olfactory nerve. In other words, the only way in which poliomyelitis could be produced with this strain of virus was by direct injection into the central nervous system or by the intranasal route. The investigators found that after the olfactory nerves of monkeys were sectioned and the virus introduced intranasally, no paralysis resulted.

Furthermore, some investigators found that in such monkeys, whose olfactory nerves were sectioned, the intravenous injection of the virus failed to produce poliomyelitis, and it was rather generally accepted that the natural portal of entry of the virus for man was by way of the olfactory nerve. That this was an erroneous conclusion is now rather obvious. It again points to the fallacy of using such artificial methods of investigation if we are applying the result to the natural disease. This is borne out by the fact that these findings led to prophylactic procedures to coagulate the nasal mucosa, such as spraying with tannic acid and alum solutions in order to prevent the virus from entering the olfactory nerves. This treatment worked remarkably well in the monkey when the old "fixed" viruses were used as the test agents, but failed when applied to man under natural conditions. It likewise failed in monkeys when freshly isolated strains of virus were employed.

Trask clearly showed that by using freshly isolated strains, poliomyelitis could be produced in the monkey by subcutaneous, intravenous and even intracutaneous injections. Furthermore, the disease could be produced in monkeys whose olfactory nerves had been sectioned. German and Trask carried out surgical procedures whereby areas of skin were deprived of nerve supply, but dermal inoculation of these exposed parts still produced poliomyelitis. Howe and Bodian have recently reported that chimpanzees may be infected by way of the gastro-intestinal tract, a portal of entry considered important by Toomey for many years.

Another recent advance has been the demonstration by Paul and Trask that the virus may be in the nasopharynx of individuals who have the so-called abortive poliomyelitis. The symptoms in these patients are such that the disease might be diagnosed as an upper respiratory infection. The virus has been demonstrated in the nasopharyngeal washings of individuals who are not in any way ill but who have recently been exposed to the disease. This clearly shows that there is a carrier problem in poliomyelitis as there is in other infectious diseases.

A much more surprising finding by Trask and Paul was the demonstration of the virus in the feces. This was true in both active and abortive cases. They also demonstrated its presence in sewage, even as far as 220 yards from the entry of the hospital sewer into the main sewer, showing that after considerable dilution the virus could be found.

Soule and his co-workers have shown that ordinary chlorination, as generally used in the purification of water, is not sufficient to inactivate the poliomyelitis virus. The concentration of chlorine needed is greater than that used in the ordinary purification of water. Whether or not the water supply has any bearing on epidemiology of poliomyelitis remains to be seen. The very recent work of Trask and Paul indicates, and to a certain extent confirms some of the older observations, that poliomyelitis seems to occur along drainage areas, starting toward the higher water and descending as the epidemic spreads.

Probably the most important development in the virology of poliomyelitis is the discovery of Armstrong that an occasional strain of the virus, after several serial passages, can produce paralysis in the eastern cotton rat. After serial passage through this animal it can be adapted to the ordinary white mouse of the laboratory. At first many investigators believed that this adapted virus was not the human poliomyelitis virus but a rodent strain of virus with properties similar to the human virus. However, most of these doubts have been dispelled.

The work of Armstrong has been confirmed by two independent laboratories working with two separate strains of virus. Toomey, who confirmed this work, used the old Flexner M. V. strain. The rodent-adapted viruses may be neutralized by antiserum to the original monkey passage virus. They may also be neutralized by human convalescent serum. In the acute stage of poliomyelitis, human serum fails to neutralize this virus but after convalescence the serum acquires neutralizing properties; thus a retrospective diagnosis may be made.

My belief is that this discovery is not important from the standpoint of aiding in the diagnosis of poliomyelitis, and diagnosis during convalescence is of very little aid to the clinician. However, the cotton rat and the mouse offer ideal experimental animals for many studies which were impossible when the monkey was the only available animal. The successful adaptation of poliomyelitis virus to the mouse has made it possible for investigators with limited budgets to study many phases of the problem.

I need mention no better example to illustrate

the importance of a cheap, easily maintained laboratory animal than that of adapting yellow fever to the white mouse. It was after this discovery that investigators practically solved the problem of prophylactic prevention of yellow fever. That the adaptation of poliomyelitis virus to the mouse will lead to a satisfactory vaccine to immunize man is problematical. Nevertheless, it does give us courage and new hope, and opens up an entirely new approach for the epidemiologist. With technical assistance he may study the spread of this agent through a population by means of the neutralization test. Such studies will undoubtedly shed new light on the epidemiology of poliomyelitis.

Probably the most needed information concerning poliomyelitis from the bacteriologist's standpoint is yet to be developed; namely, accurate and relatively rapid methods for diagnosing the disease. Up to the present, the virus has not been demonstrated in human spinal fluid. It has been found occasionally in the spinal fluid of a monkey suffering from the experimental disease. The demonstration of the virus in the nasopharynx or in the stool definitely requires a monkey colony and is extremely expensive, making this an impractical procedure for routine diagnosis. It is only an occasional strain which is able to be adapted by passage through the cotton rat. Even if it were possible to adapt all strains to the cotton rat and white mouse by serial passage, it would be impractical as a diagnostic procedure because of the time and labor involved. To adapt the virus from a single case would be a research problem in itself.

#### THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

##### CALCIFICATION OF THE MITRAL CUSPS

##### Sudden Death

F. P. McNAMARA, M.D., Dubuque

Mitral endocarditis not infrequently associated with "inflammatory rheumatism" is a common disease. Even after a single attack, there is some crippling of the heart, but after repeated attacks the damage may be so great as to leave the affected patient with very little cardiac reserve. It therefore is incumbent upon the physician to control the patient until the damage of the first attack is completely healed; to prevent recurrences insofar as possible; to estimate the cardiac damage done and to limit the patient's activities so as not to overtax the reduced cardiac capacity. In the case to be cited, the clinical data are fragmentary.



but as far as can be judged all of the above factors were neglected and death occurred suddenly due to overstrain of the heart.

#### CASE REPORT

The patient, a white man twenty-eight years of age, was found unconscious at his place of employment. He had been seen a few minutes before by fellow workmen who had noted nothing unusual about his condition. When found pinned under an overturned, loaded truck which he had been pushing, it was thought that he had been injured. While being taken to a hospital in an ambulance he died without having been seen by a doctor.

*Family History:* Irrelevant.

*Past History:* He had had two attacks of "inflammatory rheumatism" when he was a growing boy, but his family had not been told that he had a heart lesion. His family had noted that in recent years he had tired easily, although he had never complained of cardiac distress. Five years ago an acute suppurative appendix was removed but there was no mention of a cardiac lesion in the clinical record. However, the patient ran an irregular temperature for twelve days and left the hospital before it had returned to normal. Apparently it was thought that the fever was the result of the operation. At various times he was treated by different doctors for "colds," bronchitis and influenza but no one had told him he had heart disease. One year ago after a routine examination preceding employment by his last employer, a diagnosis of mitral disease was made. He was told that he was able to work and he had done so until his death.

*Autopsy Abstract:* The body was that of a well-developed and well-nourished white man. Externally the positive findings were frothy, blood-tinged, serous fluid exuding from the mouth and nostrils, lividity of the face and neck, superficial bruises of the back and left thigh and the scar of the appendectomy. Aside from the heart, the essential internal findings were moderately numerous, fatty deposits beneath the intima of the abdominal aorta, a thickened gallbladder filled with small, faceted gallstones, acute congestion and edema of each lung, acute congestion of all the viscera and bilateral, pleural effusions of blood-tinged, serous fluid. The heart was acutely dilated on the right side; the left auricle was greatly dilated and measured 12.5 centimeters in its longest diameter; the left ventricle was contracted. Its wall averaged eleven millimeters in thickness. The mitral cusps formed a rigid ring because of fusion, thickening and nodular calcification (Fig. 1). The orifice appeared as a narrow slit 3.25 centimeters in length and averaging three millimeters in width.

A few calcified nodules extended upward to the under surfaces of the aortic cusps and the chorda tendineae of the mitral cusps were thickened and semi-opaque. The heart weighed 580 grams. Microscopically the sections of the mitral cusps showed thickening due to calcification, hyalinized connective tissue and in some areas moderate round cell infiltration. Sections of the myocardium showed localized areas where the connective tissue was increased and infiltrated with small round cells and mononuclear cells resembling plasma cells (Aschoff bodies).



Fig. 1. Photograph of the heart showing great dilatation of the left auricle and calcified nodules on the upper surface of the mitral cusps.

*Anatomic Diagnosis:* Primary: Chronic mitral endocarditis with calcification (mitral stenosis and regurgitation); chronic and acute cardiac dilatation and hypertrophy; acute congestion and edema of the lungs; bilateral pleural effusion; acute congestion of all the viscera. Subsidiary: Atheromatosis of the abdominal aorta; chronic cholecystitis and cholelithiasis; abrasions of the thigh and back; operative scar (appendectomy).

#### GENERAL DISCUSSION

Since Christian<sup>1</sup> called attention to calcific aortic stenosis many cases have been reported and there has been much discussion of the etiology of the lesion. This has mainly been concerned with whether the lesion was due to a metabolic disturbance or whether it was not the end result of an inflammatory process. While there are proponents

of each theory, in recent years evidence that the latter applies in most cases has gradually accumulated. There has been less discussion of calcification of the mitral valve, but in our case it seems to be definitely the result of the old inflammation. While calcification of the aortic cusps gives a clear cut, clinical picture, that of the mitral cusps cannot be differentiated from mitral disease without calcification. Therefore a probable diagnosis of calcified aortic disease can be made clinically and by adequate study can usually be confirmed by roentgenologic studies, whereas in the case of the mitral valve, the diagnosis can only be made by fluoroscopic and x-ray studies.

In our series of 750 necropsies we have had twelve instances of calcified aortic cusps, whereas we have had only two instances involving the mitral cusps. These figures do not include the many instances of minor changes very definitely due to arteriosclerosis. Epstein<sup>2</sup> studied the incidence of distribution of calcifications of the aortic and mitral valves in a series of 148 cases of fatal rheumatic heart disease and listed the findings as follows:

CLASSIFICATION OF CASES OF RHEUMATIC HEART DISEASE BY DEGREE OF VALVULAR CALCIFICATION

Age group years	MITRAL			AORTIC			MITRAL and AORTIC		
	Slight	Mod-erate	Ad-vanced	Slight	Mod-erate	Ad-vanced	Slight	Mod-erate	Ad-vanced
10-19	3	3	0	0	0	0	0	1	1
20-29	3	5	2	0	0	0	0	0	1*
30-39	2	2	3	1	1	0	0	0	3
40-49	3	3	5	1	1	4	0	0	1
Over 50	2	1	1	1	4	3	0	1	2

\*Mitral, aortic and tricuspid valves were calcified.

Sosman and Wosika<sup>3</sup> have reported that in a series of 39 cases of calcification in the valves of the heart, the mitral valve or mitral annulus fibrosus were involved 19 times and the aortic 20 as demonstrated roentgenographically in vivo.

The methods utilized in the diagnosis and treatment of mitral disease can be found in all standard textbooks of physical diagnosis and medicine and need not be discussed. However, the frequency with which the disease is found at autopsy without having been diagnosed clinically indicates that an occasional review of such articles would be of considerable value to most physicians. The diagnosis of valvular calcifications or of calcifications of other portions of the heart are problems for the roentgenologist who should be familiar with recent literature on the subject. The article by Sosman and Wosika is especially valuable in this connection.

The treatment of "rheumatic fever" during the active stage is fairly well standardized. Too fre-

quently the cardiac lesion is ignored during convalescence and the patients are allowed to assume their usual activities before the cardiac damage is fully overcome. Prolonged rest is essential after an attack of mitral disease and the cardiac capacity should be judged at frequent intervals over a period of years in order to prevent overstrain of the heart.

The successful treatment of many streptococcal infections by sulfanilamide naturally led some workers to try it in rheumatic fever associated with cardiac lesions. Swift, Moen and Hirst<sup>4</sup> and Massell and Jones<sup>5</sup> reported that the drug was without benefit and indeed was contraindicated because of toxic symptoms. However Thomas, France and Reichsman<sup>6</sup> in a four-year, controlled study of the drug administered prophylactically, in small daily doses in order to prevent recrudescences of rheumatic fever found that it was apparently effective and that toxic effects were negligible. Their studies while needing confirmation are certainly encouraging. Possibly similar studies using the more recently discovered sulfanilamide derivatives will be found to be even more beneficial.

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#### NEW DIRECTORY OF MEDICAL SPECIALISTS

Specialists eligible for listing in the forthcoming second edition of the Directory of Medical Specialists are urged to fill in and return promptly the questionnaires for biographic data now being mailed out by the publication office.

This Directory is the official publication of the Advisory board for Medical Specialties, issued every two years, and listings are limited to those formally certified by any of the fifteen American Boards examining in the medical specialties. There is no charge for such listings. The second edition is now being prepared, and will be ready for distribution early in February, 1942, with biographic, geographic and alphabetic listings of all diplomates certified to January 1, 1942. It will include approximately 18,000 names.

The Directing Editor is Paul Titus, M.D., 1015 Highland Building, Pittsburgh, Pennsylvania, and the secretaries of the fifteen American Boards constitute the Editorial Board.



# STATE DEPARTMENT OF HEALTH

*Walter L. Livingston*

## FIRST CASE OF SPOTTED FEVER IN 1941

The first case of Rocky Mountain spotted fever to be reported in 1941 occurred in a four year old boy (J. L. M.), with residence in Adel, Dallas County.

Onset of illness was May 4 with headache, fever, chills and vomiting. On the third day, red-



Patient with Rocky Mountain spotted fever—B. J. H., sixteen years of age, Appanoose County, Iowa, June, 1939. Photographed on eighth day of illness through courtesy of F. L. Nelson, M.D., Ottumwa, Iowa.

dish macules were observed on the forearms and legs, later on the body. The macules, irregular in outline and of match-head size or smaller, were more prominent with rise in fever; the lesions were faded but still visible on the twelfth day after appearance. The patient was hospitalized in King's Daughters Hospital, Perry. Illness

was of moderate severity. Temperature reached 105 degrees; when seen on May 19, the temperature had dropped to 101 degrees, the patient was in good condition and ready to leave the hospital.

Three days before onset of illness, the patient had gone with his father on a fishing trip to the Raccoon River. During the next two days five ticks, several partially engorged, were removed from the child's scalp. On May 15, the State Hygienic Laboratory reported a positive Weil-Felix test in an agglutination titer of 1:80, on a serum specimen from the patient.

The case was reported to the State Department of Health by K. W. Diddy, M.D., of Perry and Charles Fail, M.D., of Adel.

## MORBIDITY AND MORTALITY DUE TO ROCKY MOUNTAIN SPOTTED FEVER IN IOWA

Since June, 1933, when the first case of Rocky Mountain spotted fever was reported to the Iowa State Department of Health by C. N. Freligh, M.D., Waucoma, Fayette County, and during the eight-year period from 1933 to 1940, reported cases of the disease totaled 85. Deaths for the same period numbered 14, a mortality of 16.5 per cent.

The following table presents figures of reported cases and recorded deaths for the years 1933-1940:

Year	Cases	Deaths
1933.....	5	1
1934.....	6	0
1935.....	6	0
1936.....	1	1
1937.....	16	3
1938.....	5	0
1939.....	27	7
1940.....	19	2
Total.....	85	14

The accompanying illustration shows the distribution and appearance of the macules in a moderately severe case of Rocky Mountain spotted fever.

### STUDY OF THE DOG TICK LIFE CYCLE

The Iowa State Department of Health is sponsoring a project for study of the life cycle of the common dog tick, *Dermacentor variabilis*, in cooperation with Carl J. Drake, Ph.D., Ames, state entomologist, and the Department of Zoology and Entomology, Iowa State College.

A chief purpose of the field work which entomologists G. W. Eddy and Chas. R. Joyce are conducting at the Tama Indian Reservation and at Ledges State Park, is to obtain information regarding animal hosts of tick larvae and tick nymphs, the immature stages of the wood tick or common dog tick.

A progress report under date of May 16 shows that *adult ticks* were active in the vicinity of Tama during the first week of April. During the four day period, May 1 to 5, ticks numbering 217 were removed from a dog belonging to an Indian family. Ticks of the *nymphal stage* were reported as having been found on two animal hosts, the whitefooted mouse and the cottontail rabbit. In addition, over 1,500 tick larvae were removed from whitefooted mice and over 300 from the cottontail rabbit.

A more detailed account of the field observations of Eddy and Joyce will appear in the scientific section of the July number of the JOURNAL.

### TWO EPIDEMICS OF GASTRO-ENTERITIS

#### *Outbreak at Grinnell*

On April 11 and 12, 1941, investigation was made of a food-borne epidemic of gastro-enteritis at Grinnell. Twenty-two among a group of 37 persons who were exposed, became ill with nausea, vomiting and purging, several hours after a noon luncheon meeting on April 6. In all but three instances, symptoms subsided the following day.

Samples of the egg salad, ham and creamed peas which were regarded as having played a part in causing the outbreak, were forwarded by S. D. Porter, M.D., to the State Hygienic Laboratory, for bacteriologic study. The egg salad was found to contain "enormous numbers of a highly hemolytic strain of staphylococcus aureus in practically pure culture." The creamed peas showed about equal numbers of hemolytic and non-hemolytic staphylococci; many non-hemolytic staphylococci were isolated from the ham.

Investigation and laboratory findings indicate that this outbreak was caused by staphylococcus toxin; additional study is being made with the purpose of demonstrating which of the staphylococcus strains are producers of potent toxin.

#### *Cases at Cedar Rapids*

Investigation was made on April 19 of four cases of gastro-enteritis with onset on April 16. The patients concerned were four young men who took sick after eating ham and mayonnaise sandwiches while on a trip from Illinois. Illness was much improved after twenty-four hours.

Bacteriologic examination at the State Hygienic Laboratory of ham and mayonnaise contained in the sandwiches, showed the presence of staphylococcus aureus. Evidence indicates that the gastro-enteritis was due to staphylococcus toxin.

### COMPARATIVE FIGURES ON MATERNAL AND INFANT DEATH RATES\*

A study of maternal death rate figures over the ten year period from 1930 to 1940 reveals that the rate in Iowa dropped from 5.9 in 1930 to 3.56 in 1940. This compares favorably with the national average in 1940 of 3.92. Indiana had the lowest rate of 2.50 and Mississippi the highest of 6.21.

The infant death rate for Iowa in 1940 was 36.74 as compared with 53.9 for 1930. The national average of infant death rates in 1940 was 47.69, showing Iowa well below the average. Arizona showed the highest figure of 84.2 and Oregon the lowest with 32.93.

The 1940 figures as indicated in these studies show that medicine in the state of Iowa has made phenomenal strides in reducing maternal and infant deaths over the past ten year period, and in each instance these rates are far below national averages.

\*The 1940 national figures were obtained by questionnaire forms sent to the various state health departments, and the above studies are based on reports already received from twenty states.

### PREVALENCE OF DISEASE

Disease	Apr. '41	Mar. '41	Apr. '40	Most Cases Reported From
Diphtheria .....	17	18	19	For the State
Scarlet Fever .....	226	273	260	For the State
Typhoid Fever.....	6	2	4	Decatur, Jasper, Mahaska, Page, Webster, Woodbury
Smallpox .....	12	14	103	For the State
Measles .....	1171	829	1140	Jefferson, Linn, Marshall, Van Buren, Black Hawk, Dubuque, Hamilton, Polk
Whooping Cough..	197	226	100	Boone, Woodbury
Brucellosis .....	24	12	14	For the State
Chickenpox .....	507	548	189	Black Hawk, Des Moines, Dubuque, Lee, Hamilton, Mahaska, Woodbury
German Measles...	34	5	5	For the State
Influenza .....	165	618	23	Woodbury, Polk
Mumps .....	1300	1139	562	Black Hawk, Scott, Woodbury
Pneumonia .....	152	239	195	Clinton
Poliomyelitis .....	1	1	1	Calhoun
Tuberculosis .....	12	75	54	For the State
Gonorrhea .....	114	97	131	For the State
Syphilis .....	257	209	256	For the State



# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## THE DAVENPORT SESSION

The Ninetieth Annual Session of the Iowa State Medical Society held in Davenport last month was characterized by several outstanding features which are worthy of special mention.

From a chronologic viewpoint the first of these was the preconvention session of the Central States Society of Industrial Medicine and Surgery, held Tuesday afternoon and evening. The quality of papers presented on this program was excellent, and it is to be hoped that future meetings of this group may be scheduled during the convention proper, so that more members may take advantage of the opportunity to hear these vital discussions.

The customary procedure was followed for the Wednesday and Thursday morning general sessions and the sectional conferences Wednesday afternoon, with guest speakers and local men alike maintaining previous high standards of scientific merit in their addresses. Thursday afternoon, however, was devoted to the annual meeting of the Iowa Interprofessional Association, with the Iowa State Medical Society acting as host to the allied professions of dentistry, pharmacy, nursing and veterinary medicine. General trends in the field of medicine and public health indicate the necessity for increased understanding and co-operation between these professions, and if one is to judge from attendance and interest in the presentations, this need is fully appreciated.

The banquet Thursday evening was well attended, and the local arrangements committee is especially to be commended in securing the popular and entertaining Dr. Gordon J. Laing for the address of the evening.

Sectional conferences Friday afternoon marked

the close of the session, with an obstetric symposium replacing the usual surgical program.

Mention should be made of the Scientific Movie Theatre which attracted many members during the three-day continuous showing of scientific films. The committee in charge of this phase of the program was unusually successful in obtaining new and valuable pictures. The Speakers Bureau Recording Room also drew many interested physicians. The recording of scientific lectures by outstanding medical men, for use in small county society meetings, is a comparatively new venture, but one which we believe has definite possibilities. We predict that the idea will be developed in other states, and we are proud of our Speakers Bureau for its pioneer work in this field.

The scientific exhibits at the meeting this year set a new record in quality and value. All exhibits were worthwhile adjuncts to a medical session, and the task of selecting three for special mention was indeed difficult. These exhibits are described in a separate story elsewhere in this issue. The commercial exhibits, too, should receive recognition for displaying many new ideas and interesting sidelights on the practice of medicine. We hope that members in attendance at state meetings will develop the habit of visiting these exhibits which have been planned and made, often at great expense, for the express purpose of attracting the general practitioner and acquainting him with the products of each respective exhibitor.

Final registration figures for attendance at this session are:

504.....	Iowa physician-members
108.....	Woman Auxiliary members
73.....	Commercial exhibitors
134.....	Guests
<hr/>	
819.....	Total

The figure for guests includes delinquent members of the State Society, Illinois physicians, guest speakers, and nurses, medical students, pharmacists, dentists and veterinarians.

The responsibility of arranging an annual session of this scope is heavy and the membership at large owes a debt of gratitude to all who participated in plans for this meeting. The list of workers is too lengthy for individual acknowledgements, but the JOURNAL takes this opportunity to extend the sincere appreciation of 2,500 members to those in charge of the program. Especially do we thank the members of the Scott County Medical Society and Davenport for the hospitality so generously extended during the week of May 12 to 16, 1941.

### CHEMOTHERAPY IN DYSENTERY

The unusual efficacy of the sulfonamide drugs in the treatment of pneumococcal, gonococcal, streptococcal, meningococcal and staphylococcal infections, naturally results in the experimental administration of these compounds in other types of infection. Recent experimental and clinical studies of these drugs in the treatment of bacillary dysentery are of sufficient importance to justify editorial comment.

Cooper and Keller of Cincinnati report the effects of sulfathiazole, sulfapyridine, sulfamethylthiazole and sulfanilamide in experimental Flexner and Sonne dysentery in mice. These authors found that the first three compounds were equally efficacious, but that sulfanilamide was of the least value. Sulfathiazole gave complete protection against the intraperitoneal injection of two minimum fatal doses of dysentery bacilli when administered either three hours before or after the injection. An interesting finding was the fact that repeated doses of the drug every three hours for thirty-six hours offered no more protection than a single dose three hours after injection. In the untreated control animals the bacteria in the peritoneal fluid increased from 10,000 at one hour to one to ten billion within twelve to fourteen hours, at which time the mice died. In the treated animals the bacterial count increased slightly for three to six hours, then rapidly decreased to zero in twenty-five to thirty hours, with survival of the mice.

Taylor of Duke University reports the results in a series of twenty-seven patients with bacillary dysentery or parenteral diarrhea. Thirteen of the patients were treated with sulfathiazole and fourteen comparable cases were used as controls. There were no deaths in the treated group, whereas there were two deaths in the patients who did not receive chemotherapy. The average time for the stools to reach four a day of normal color and consistency was 3.2 days in the treated group and 15.6 days in the control group.

If these studies are confirmed it is clear that another serious and frequently fatal disease, heretofore difficult to manage and long in duration, promptly responds to chemotherapy.

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### BRITAIN APPEALS FOR AMERICAN DOCTORS

On April 21 the American Red Cross released a news bulletin to the effect that 1,000 volunteer American physicians were desired by the British Red Cross to serve overseas either with the Royal Army Medical Corps or with the Emergency Medical Service, a civilian organization under the

Ministry of Health. The American Medical Association and the National Research Council are joined with the American Red Cross in the effort to assure that Britain's want will be speedily met. Approval of Secretary of War Stimson, Surgeon General Parran of the United States Public Health Service, and President Roosevelt, has been granted.

Dr. Parran states that "During my recent visit to Great Britain the acute need for more doctors repeatedly was brought to my attention. With the whole civil population in the front lines of their gallant defense effort the assurance that medical aid is promptly available to all casualties is an important consideration in maintaining morale. Day and night, in every operating theater a surgical team stands by. A doctor is on call for every first aid post. Each night doctors visit all large shelters. A modern army requires many doctors. They are needed too in the large factories and to supply the needs of an expanded navy and air corps. Up to now, epidemics have been held in check. Air raid casualties have been fewer than anticipated, and have received prompt attention. To accomplish these results, however, the British doctors have been under a severe strain, and medical services for the general population have been diluted. Britain's appeal to the American Red Cross for 1,000 of our young doctors is a great opportunity for us to meet a real need. Aside from its humane aspects, American doctors, working side by side with British surgeons and physicians, will acquire valuable experience in the medical technics of modern warfare. Those who answer this Red Cross appeal will not only have rare professional opportunities, but will also have the satisfaction of giving help where it is sorely needed. I feel certain America's doctors will answer this call. The needs are great; the rewards will be greater."

Certain qualifications are required of all applicants. They must be graduates of Class A medical schools in Canada or the United States and must have had at least one year of clinical hospital training in an institution approved by the American College of Surgeons. At least five years of practice, and not more than ten years, are required for the Emergency Medical Service, and an age limit of not more than forty-five years is specified for this branch. The age limit for service in the Royal Army Medical Corps is forty years. Candidates must be citizens of the United States, unmarried or without dependents, and must pass a stringent physical examination.

Rank and pay depend upon length of service. Initially all doctors accepted for service with the Royal Army Medical Corps will be commissioned



as lieutenants with remuneration at approximately \$1,456.50 annually plus a bonus of \$402.50 at the end of each year of satisfactory service. Promotion to rank of captain with pay of \$1,800.00 plus a bonus of \$603.75 will be given those who serve satisfactorily as lieutenants for the first twelve months. Free transportation will be provided from home to the point of duty abroad and return home at end of service. Disability compensation is stipulated in event of disability or death.

Apparently physicians assigned to the Emergency Medical Service serve as civilians. Their duties include hospital treatment of service and civilian air raid casualties, other service casualties, and a number of special categories of civilian sick for the treatment of which the government has undertaken financial responsibility for the duration of the war. Pay is the same as for British physicians, \$2,213.75 yearly, with full board and lodging, or a monetary allowance if the latter is not provided.

The JOURNAL is glad to give space to this appeal of the American Red Cross. It has no special comments to make. None is needed. Full information concerning "Doctors for Britain" can be obtained from Red Cross National Headquarters, Washington, D. C.

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#### EXHIBITS RECEIVE CERTIFICATES

The scientific exhibits presented for the members of the Iowa State Medical Society at the Nineteenth Annual Session constituted an outstanding feature which attracted many visitors. Not only has the number of scientific exhibitors increased year after year, but the quality of the displays has likewise improved until this phase of the annual meeting has become one of the most valuable from the standpoint of scientific knowledge gained.

The selection of three exhibits for certificates of merit was a difficult task, but the judges designated the following displays for this honor: that of Dr. Richard F. Birge from the Department of Pathology of the Iowa Methodist Hospital, Des Moines; that of Dr. F. P. McNamara of Finley Hospital, Dubuque; and that of Dr. Arthur Steindler from the Department of Orthopedic Surgery, State University of Iowa, College of Medicine, Iowa City.

Dr. Birge presented an excellent display of color photography with gross and microscopic specimens filmed with a thirty-five millimeter

camera and attractively mounted. The purpose of the exhibit was to show the application of color photography to microphotography, and to demonstrate clearly the advantages of replacing the old method of micro slide projection with the newer method of making photographs of a uniform size which can be shown in a single projector. The important feature of the new method is that small hospitals and laboratories without expensive and elaborate equipment may now augment their studies and records by using a simple camera and a single projector.

Dr. McNamara's exhibit consisted of a large number of pathologic anatomic heart specimens, illustrating the many different types of cardiac pathology encountered in a general practice. The exhibit reflected diligent and painstaking care in collecting and preserving these specimens over a period of years. Mention should also be made of the complete and thorough case records accompanying each specimen.

Dr. Steindler's exhibit was an excellent demonstration on reflex pain in low back disorders. Phases of the diagnosis and management of reflex pain, especially sciatic radiation associated with certain disorders of the low back region, were graphically portrayed. The exhibit was unique in that material was so well organized and so simply presented that it was of equal value and interest to the general practitioner and the specialist in the field of orthopedics.

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#### EYE PHYSICIANS ADOPT INSIGNIA

The Iowa Academy of Ophthalmology and Otolaryngology met in Cedar Rapids, September 21, 1940, and appointed a committee consisting of Drs. H. J. McCoy, C. C. Jones, C. C. Walker, O. L. Thorburn and J. K. von Lackum, to consult with Mr. R. V. Blair of Physicians Optical Laboratories in establishing an emblem for the exclusive use of Academy members or any physician who this committee, or any subsequent committee appointed for this purpose, may find eligible for membership as stated in Article 3, Section 1 of the Constitution and By-Laws of this Academy.

The emblem was created; a suitable drawing was made (see accompanying illustration), and it was presented by Dr. H. J. McCoy to the House of Delegates of the Iowa State Medical Society in an official meeting Wednesday afternoon, May 14, 1941. It was moved that the insignia be adopted as the official emblem of the members of this society who limit their practice

to diseases of the eye, ear, nose and throat as determined by the Academy of Ophthalmology and Otolaryngology. Its adoption was officially approved. It has also been presented to and approved by the Des Moines Academy of Ophthalmology and Otolaryngology. The action of the House of Delegates was reported to the eye, ear, nose and throat section Wednesday evening, May 14, 1941, and was unanimously approved by that group.



The emblem will be available in the form of a transfer sign which can be applied to any surface, for example, office doors. Electrotpe cuts for use on letterheads will also be available. It is to be used to identify a qualified eye physician, and it is hoped that every member of the Iowa State Medical Society who can qualify for this emblem will place an order with the committee immediately, so that the number of emblems and the cost may be determined. Applications should be made to the above committee, and addressed to the Iowa State Medical Society, 505 Bankers Trust Building, Des Moines, Iowa.

#### MEDICAL PREPAREDNESS\*

Toward the end of March, the Committee on Medical Preparedness was requested by the American Medical Association to conduct an additional survey on the availability of physicians for military and naval service. Although part of this work had been completed in January, this request asked for a uniform tabulation of information from each county, and accordingly, your committee asked each county medical society to provide the data. The response was excellent, only eleven counties failing to submit their reports. They

were as follows: Calhoun, Chickasaw, Clarke, Clinton, Delaware, Dickinson, Harrison, Poweshiek, Scott, Webster and Winneshiek. Of the above, only one county registered definite opposition to cooperating.

The American Medical Association had asked that the information be forwarded by May 1, and in spite of the missing records from eleven counties, your State Committee was able to comply by drawing upon previous information compiled for the Surgeon of the Seventh Corps Area. Such a procedure does not make the reports as complete or accurate as desired, but under the circumstances it was the only solution.

Earlier in the spring, the Committee studied the list of medical reserve officers in Iowa and named those it thought should be exempt from military service. In spite of this, however, many of these reserve officers were called, whereupon the Committee wrote to the commanding officer of the Seventh Corps Area to learn why its recommendations were not followed. The reply will be of interest to Iowa physicians. Twenty-five per cent of all medical reserve officers in the United States are in the Seventh Corps Area, comprising North and South Dakota, Nebraska, Kansas, Missouri, Iowa and Minnesota. Consequently, when an order is issued for reserve officers, the Seventh Corps Area necessarily has to provide far more than its proportionate share would ordinarily be, and this accounts for the large number being drawn from Iowa in spite of the fact that they were marked exempt.

#### SPECIAL INSTITUTES ON INDUSTRIAL HEALTH

Special institutes on industrial health sponsored by the Division of Industrial Hygiene of the State Department of Health, in cooperation with the Speakers Bureau and the Committee on Industrial Health of the Iowa State Medical Society, have been announced as follows:

Burlington.....	Monday .....	June 23
Cedar Rapids.....	Tuesday .....	June 24
Mason City.....	Wednesday .....	June 25
Sioux City.....	Thursday .....	June 26
Des Moines.....	Friday .....	June 27

These institutes have been designed to serve as intensive refresher courses to acquaint Iowa physicians with the health problems arising from high speed production incident to the national defense program. Afternoon and evening sessions will be held, and lecturers will include leading authorities in the field of industrial hygiene, industrial health and occupational diseases.

A more complete program will be mailed to all licensed physicians in advance of the meetings. No fee will be charged for attending these institutes.

\*From the Committee on Medical Preparedness.



## Blood Transfusion Association and the Plasma for England Project

EUGENE C. WAGNER, M.D., Des Moines  
Director, Serum Center, Iowa State Department of Health

The Blood Transfusion Association is a non-profit membership corporation, organized in 1929 for the principal purpose of improving the supply of blood for transfusion purposes in New York City. It has conducted a Blood Donor Bureau and has furnished special high-titred serum for typing blood groups. Surplus funds have been used in financing research in the transfusion field including the development of blood substitutes. Many others have been working on these same problems. Drs. E. L. DeGowin and R. C. Hardin of the Department of Internal Medicine at the University Hospital, Iowa City, published articles in the April, 1941, issue of this JOURNAL, containing their observations and conclusions on the use of stored blood on patients under their care and the application of these conclusions in civil and military medicine.

By June, 1940, sufficient information on blood plasma had been acquired that knowledge of its use had reached a point where it might be used effectively for saving life in the warfare then raging in the low countries and France. Realizing that casualties were high both in the armed forces and among the civilian populations subjected to continued bombing, strafing and exposure, and that plasma could be used in large quantities for treatment of shock cases in France and England, Dr. Scudder suggested to the president of the Association the idea of shipping plasma to these countries.

The Trustees and Board of Medical Control of the Association conferred with experts in this field and decided to undertake the quantity production of plasma with the view in mind of sending it to France and England to help meet emergencies there. The Association appropriated \$15,000 for use in the project and committees were appointed to organize various details. The cooperation of the Red Cross was enlisted in obtaining \$25,000 more, and in conducting a campaign for donors through its chapters in the metropolitan area. The Red Cross accepted the proposals and later both it and the Association appropriated \$5,000 in addition for special purposes and research.\*

The details of the program having been fully completed, and workers, almost all of whom were volunteers, having been secured, actual carrying

out of the plans was begun in August, 1940. By this time France had capitulated and England presented the greatest need for the plasma for treatment of her numerous bombing victims. Donors contacted by the Red Cross through radio and newspaper appeals and other publicity were asked to call the appointment bureau and were given appointments at the volunteer cooperating hospitals most convenient for them. There are now about 17,000 names on the list of those willing to make this most personal contribution to the Allied cause. Each donor upon entering any of the nine voluntary hospitals, Presbyterian, New York, Memorial, Mount Sinai, Post-Graduate, Long Island College, Lenox Hill, Hospital for Joint Diseases and Jewish Hospital of Brooklyn, was greeted by a Red Cross nurse and conducted to the room where the blood was to be drawn.

For the donor's protection a history was taken and a physical examination was done by a physician; the donor's blood pressure was taken and his hemoglobin and blood type determined. Then by sterile technic standardized for all the hospitals a phlebotomy was performed and blood, not exceeding 500 cubic centimeters, was drawn into a bottle containing 50 cubic centimeters of five per cent citrate solution. After completion of this procedure the donor's arm was bandaged, he was served some refreshments, and observed for about ten minutes to be sure there were no after effects. In the entire project there were no serious accidents. The blood donations and samples for serology tests were labeled in the presence of the donor to avoid mistakes in identification. No attempt will be made to describe in full the technic used in preparing the plasma; some hospitals used the centrifuge method of separation of plasma from cells, others used sedimentation.

After separation of cells the plasma from an average of eight bottles of blood was siphoned into a pooling flask for the purpose of suppressing the agglutinins. A sample was removed from each pool for aerobic and anaerobic cultures carried out in the Central Bacteriological Laboratory for the project, located in Presbyterian Hospital. Merthiolate was added as a preservative to each pool in a quantity sufficient to guarantee dilution of 1:10,000 and the pool was set aside for one week to await negative culture reports. After these reports were received, 500 cubic centimeters of the plasma were placed in each of

\*Publication of the Blood Transfusion Association, 2 East 103rd Street, New York, N. Y., 1941.

the dispensing bottles, Baxter Plasmovacs containing 500 cubic centimeters of sterile pyrogen-free physiologic saline under 13 inches of water vacuum. The whole procedure was done with careful aseptic technic in a "closed system" as much as possible. At the time of final dispensation samples were again sent to the Central Bacteriological Laboratories to be cultured for contaminating organisms and to have safety tests run. For the latter test a mouse was injected with the product to determine the presence of toxins, viruses or pyrogens. The 1,000 cubic centimeter bottles were packed in cartons of six, sealed so that entrance into the cartons would be immediately suspected, and placed in a central refrigerated storeroom to await shipment to England.

In England samples from each carton were again tested bacteriologically before release for use in emergency stations. Accurate records were kept of each donor flask, pooling flask, final container and carton. Strict compliance with federal, state and city regulations regarding the preparation of biologic products was observed throughout this project.

The first blood was drawn for Britain on the day that the first bombings of London occurred, August 16, 1940. In November word was received from England that the organization of similar work there had reached a point that by early in 1941 England would be able to supply enough plasma for its own use. Work continued on the project until January 17, 1941. Between August 16, 1940, and January 17, 1941, 14,556 bloods were drawn and about 5,500 liters of plasma saline solution were produced for shipment. Of the plasma shipped at least one shipment of 222 liters was lost by the sinking of S. S. Western Prince. It is estimated that about 521 liters were discarded because of contamination.

Experience gained from carrying out the Plasma for England Project has given the Association valuable knowledge concerning first, the best methods of organizing a project for the mass production of a blood substitute; second, the best forms of equipment to be used in the preparation of this product; and third, the means of insuring an innocuous and efficacious final product. The question of serum versus plasma as a blood substitute has not been solved. Reports as to the use of plasma in England have been meager, and the Association is continuing research work on this problem as well as that of the preparation and clinical use of desiccated serum or plasma which seems to offer certain advantages over the liquid forms.

Work is also progressing on a program where-

by blood might be quickly collected from 100,000 donors at various points in this country, the blood substitute processed from this blood to be placed at the disposal of the United States Navy if it should ever have need of it.

We feel the Blood Transfusion Association and its volunteer workers are to be commended for the efficient manner in which they organized and completed the Plasma for England Project; upon the scientific manner in which they are conducting research problems which have arisen during work done on this project; and upon their intention to place the knowledge thus gained at the disposal of military authorities of the United States to the end that a similar project may become part of the National Defense Program.

#### IOWA CONFERENCE ON CHILD DEVELOPMENT AND PARENT EDUCATION

The Fifteenth Iowa Conference on Child Development and Parent Education will be held in Iowa City, June 17, 18 and 19, 1941. The conference is sponsored by the Iowa State Council for Child Study and Parent Education with the cooperation of the Iowa Child Welfare Research Station and the Extension Divisions of the University of Iowa, Iowa State College and Iowa State Teachers College.

The general theme of the conference will be "Children and Youth in a National Emergency", with the following speakers and subjects:

Dr. Malcolm H. Finley, Psychiatrist, Winnetka Public Schools, Winnetka, Illinois

Mental Health in Times of Stress

Mrs. Sidonie M. Gruenberg, Director of the Child Study Association of America, New York City

Persistent Problems in Raising Children

We, the Parents

Dr. Howard Y. McClusky, Associate Director of the American Youth Commission, Washington, D. C.

The Special Problems of Youth

Practical Suggestions for Youth Programs

Dr. Margaret Mead, American Museum of Natural History, New York City

Society in a National Emergency

Primitive Society and Ours

Dr. Ernest O. Melby, Dean of the School of Education, Northwestern University, Evanston, Illinois

Living Up to Our Principles of Democracy

Panel Discussion on Problems of an Emergency Character:

Food Problems; Problems Affecting College Youth  
Dean F. M. Dawson, College of Engineering, University of Iowa

Dr. Sybil Woodruff, Head, Department of Home Economics, University of Iowa

Dr. P. C. Jeans, College of Medicine, University of Iowa

Dr. P. Mabel Nelson, Head, Department of Foods and Nutrition, Iowa State College, Ames, Iowa

Dean Jay B. MacGregor, Cornell College, Mt. Vernon, Iowa



# SPEAKERS BUREAU ACTIVITIES

## Marshall County Postgraduate Medical Course

Dr. Charles B. Puestow, Associate Professor of Surgery at the University of Illinois College of Medicine, will be the guest speaker at the June meeting of the Marshall County Medical Society. The meeting will be held in Marshalltown at the Hotel Tallcorn, Tuesday, June 3. Dinner will be served at 6:00 p. m. following which Dr. Puestow will deliver his address on Preoperative and Postoperative Care and present a fifteen minute colored motion picture. This lecture will be of vital interest to everyone and Dr. R. S. Grossman, program chairman, asks the physicians in that locality not to miss this opportunity to hear Dr. Puestow.

## Spirit Lake Postgraduate Medical Course

The June meeting of the postgraduate medical course in Spirit Lake will be held in the Antlers Hotel Tuesday, June 17, at 6:30 p. m. Dr. August R. Anneberg of Carroll will be the guest speaker for the evening and will deliver his address on Diagnosis of Acute Surgical Abdominal Conditions immediately following the dinner hour. Dr. F. L. R. Roberts, program chairman, extends a cordial invitation to all physicians in that vicinity.

## Boone-Story Postgraduate Medical Course

Dr. Harvey S. Allen of Chicago, Illinois, will be the guest speaker at the June meeting of the Boone and Story County Medical Societies which will be held in Ames at the Sheldon-Munn Hotel Thursday, June 26, at 6:30 p. m. Dr. Allen's lecture on Immediate Treatment of Burns will be of interest and value to all physicians, and those in the surrounding counties are urged to be present.

## Tama County Postgraduate Medical Course

The Tama County Medical Society will hold its second postgraduate medical lecture on June 26, at which time Dr. Daniel J. Glomset of Des Moines will present The Management of Acute Cardiac Failure. This will be a dinner meeting held in Dy-sart at 6:30 p. m. The Tama County Society welcomes any physicians in that territory who wish to take advantage of this opportunity to hear Dr. Glomset.

## Special Institutes on Industrial Health

The Speakers Bureau and the Committee on Industrial Health of the Iowa State Medical Society

are cooperating with the Division of Industrial Hygiene of the Iowa State Department of Health in conducting special institutes on industrial health. Five meetings will be held during the month of June, each of which will be comprised of an afternoon and evening session with leading authorities speaking on industrial hygiene, industrial health and occupational diseases. The institute will be held in Burlington on Monday, June 23; in Cedar Rapids on Tuesday, June 24; in Mason City on Wednesday, June 25; in Sioux City on Thursday, June 26; and in Des Moines on Friday, June 27. Completed programs will be mailed to all physicians prior to the meetings. No fee will be charged to attend.

## Summer Meeting—Upper Des Moines Medical Society

The annual summer meeting of the Upper Des Moines Medical Society will be held at Templar Park on Spirit Lake Thursday, July 10. The program for this meeting is being completed at the present time, and from all indications it should prove to be one of the most interesting and valuable sessions in the history of this Society. The final program will appear on this page in the next issue of the JOURNAL and printed programs will be sent from this office to the physicians in that locality.

## Wapello County Postgraduate Medical Course

The Wapello County Medical Society has requested the Speakers Bureau to arrange another postgraduate medical course to be held in Ottumwa this fall. This Society sponsored a postgraduate medical course last fall, and because of its inestimable value the members voted for a similar program this year. No definite program has yet been selected for this series of lectures, but the completed schedule will be carried on this page in an early issue of the JOURNAL.

## RADIO SCHEDULE

WSUI—Tuesdays at 1:15 p. m.

WOI—Wednesdays at 2:05 p. m.

June 3-4 Care of Children During Summer Months

Arnold M. Smythe, M.D.

June 10-11 Incidence of Accidents

Fred Sternagel, M.D.

June 17-18 Summer Skin Lesions

Wendell M. Willett, M.D.

June 24-25 Common Diseases of Animals Communicable to Man

E. A. Benbrook, D.V.M.

# WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*  
5822 North Waterbury Road, Des Moines

*President*—MRS. W. R. HORNADAY, Des Moines

*President Elect*—MRS. F. W. MULSOW, Cedar Rapids

*Secretary*—MRS. M. J. MOES, Dubuque

*Treasurer*—MRS. A. E. MERKEL, Des Moines

## THE STATE CONVENTION

The Thirteenth Annual Convention of the Woman's Auxiliary to the Iowa State Medical Society was held in Davenport, May 14 and 15, 1941.

On Wednesday morning at eleven o'clock in the Hotel Mississippi, Mrs. E. T. Warren of Stuart, president, presided over a meeting of the state board members and county auxiliary presidents. This meeting was devoted to an informal discussion of various departmental projects by the officers and chairmen of committees. Membership in the state auxiliary was reported to have increased from 340 the previous year to 464 this year.

At one o'clock a luncheon for board members and county auxiliary presidents was held in the East Lounge of the Hotel Mississippi. Following luncheon the remainder of the business scheduled for the morning was concluded.

A tea for doctors' wives was held in the Davenport Municipal Art Gallery at three o'clock Wednesday afternoon. A musical program was presented and an hour of fellowship enjoyed. On Wednesday evening guests were entertained at a bridge party in the Blue Room of the Hotel Blackhawk.

The convention was called to order Thursday morning by the president in the auditorium of the Lend-A-Hand Club. Annual reports of all officers, committee chairmen and county auxiliary presidents were made at this time. These complete reports will be printed in the July number of the JOURNAL. The Gertrude Downing membership cup was awarded to the Polk County Auxiliary for having made the greatest percentage of gain in membership during the preceding year.

At one o'clock transportation was provided for all to attend the luncheon and afternoon session at the Outing Club. After the luncheon, Mrs. F. H. Lamb of Davenport introduced Major A. K. Stiles of the Rock Island Arsenal, who gave an address on National Defense. His talk was humorous, timely and valuable for crucial days such as these. Greetings were extended to the convention by Dr. Nathan B. Van Etten of New York, president of the American Medical Association, Dr. Frank P. McNamara of Dubuque, president of the Iowa State Medical Society, and Dr. Earl B. Bush of Ames, president elect of the Iowa State Medical Society. A symposium on medical topics of particular interest to women was introduced by Mrs. W. R. Hornaday of Des Moines.

Dr. John H. Randall of Iowa City discussed Cancer Control; Dr. Donald C. Conzett of Dubuque talked on Crippled Children and read a paper written by Dr. James A. Downing of Des Moines on The League for the Hard of Hearing.

Registration for the convention numbered 81 from outside Davenport, and local attendance increased this number to 108.

The Davenport doctors' wives proved themselves to be delightful hostesses. All details were carefully planned and the social events were beautiful in their appointments and decorations. Complete reports of the officers and committee chairmen will be published in the July JOURNAL. Officers elected for the year 1941-1942 are as follows:

President.....	Mrs. W. R. Hornaday, Des Moines
President Elect.....	Mrs. F. W. Mulsow, Cedar Rapids
First Vice President.....	Mrs. J. F. Veltman, Winterset
Second Vice President.....	.....
.....	Mrs. A. H. Hendrickson, Sioux City
Third Vice President.....	.....
.....	Mrs. Isaac Sternhill, Council Bluffs
Fourth Vice President.....	Mrs. L. A. Coffin, Farmington
Secretary.....	Mrs. M. J. Moes, Dubuque
Treasurer.....	Mrs. A. E. Merkel, Des Moines
	{ Mrs. E. T. Warren of Stuart
Board of Directors....	{ Mrs. Fred Moore, Des Moines
	{ Mrs. E. A. Hanske, Bellevue

## REPORT OF THE PRESIDENT

The Woman's Auxiliary to the Iowa State Medical Society is rounding out twelve years of service. We feel a debt of gratitude should be extended to the officers who have pioneered in this work. Our accomplishments and our present activities are due to the untiring efforts of these past officers who have carried on so well.

The 1940-1941 year has been a busy one for the president of this Auxiliary. Writing letters takes a part of every day. Visiting county auxiliaries, attending board meetings, working with committees and helping plan programs leave little time for leisure.

The attitude of the chairmen and officers has been most helpful. Each one responded when called upon.

The educational program was our first thought. We were fortunate in having a fine committee, each member assuming responsibility for a definite part



of the program. The subject for the year, "Modern Trends in Medicine," was chosen and a program was outlined for each month. Bibliographic notes were included. One member of the committee prepared a suggested program on Socialized Medicine, another one on Child Welfare and another one on Mental Hygiene. One member wrote a series of book reviews for our Auxiliary News and another wrote a column of pertinent facts relating to health. The topics each month were confined, for the most part, to timely subjects for that particular month.

Organization and membership are departments which received much time and thought. The chairman of the Organization Committee mailed letters to every doctor's wife who had been a member and was not active at this time. Many county contacts were made and new auxiliaries were organized. One county voted to disband because of lack of leadership but paid 1940-1941 dues. This may be overcome in the future by the state president visiting all county auxiliaries early in the year to inform them of her plans and suggestions. Her contact with the National Auxiliary and with the Iowa State Medical Society and the American Medical Association gives her much interesting material to impart. The organization chairman who is also president-elect has been in close contact with all phases of auxiliary work and has worked faithfully in contacting unorganized counties.

The Medical Society has been pleased with the articles on pending legislation, written by the chairman of our Legislative Committee for the Auxiliary News.

The Revisions Committee made several helpful recommendations for revisions to our constitution. Mrs. S. E. Lincoln who is chairman of this committee and also state president of the Congress of Parents and Teachers made the suggestion for the subject of our symposium which is being presented at our state meeting.

The chairman of the *Hygeia* Committee reports an increase in *Hygeia* subscriptions. A few groups have failed to give the Auxiliary credit when subscriptions are sent in by their doctors. One group reported forty-five subscriptions but had not asked for Auxiliary credit at *Hygeia* headquarters. One county received honorable mention.

The chairman of our Public Relations Committee reported a ten point program at the fall Board meeting. The subject for the health essay contest this year was "Food For Health's Sake." This is the eighth year for the essay contest and much credit is due to Mrs. W. A. Seidler, the chairman, for its success. The essay was broadcast on the Speakers Bureau radio program by the winner.

We have endeavored to cooperate with the county medical societies and the State Department of Health in immunization programs and to serve as a contact between lay groups and the medical profession. The radio program prepared by the American Medical Association "Doctors at Work," and those arranged by our own State Society, have been publicized. Most of our members belong to federated clubs, Red Cross

chapters and other philanthropic organizations in which they can accomplish much in the way of health education.

Our Auxiliary News has shown marked improvement this year. Under the leadership of the chairman of the Press and Publicity Committee, interesting news from county units, articles by the chairmen of standing committees, and other messages have appeared each month. A splendid article on Mental Hygiene by Mrs. E. T. Butterfield was published. Our book reviews by Mrs. Keith Chapler have been published in the National Bulletin and the "Do You Know" column by Mrs. E. E. Shaw has been reprinted in newspapers.

The chairman of the Exhibit Committee is preparing an exhibit for the state and national meetings. The county auxiliaries could be more helpful by keeping scrapbooks of clippings and photographs which could be added to this exhibit. An exhibit of *Hygeia* and the packet of American Medical Association publications are shown at the state meeting. Also posters of "Doctors at Work" and catalogues of health publications are distributed.

Although this is the first year we have had a Bulletin Chairman we are able to report twenty-two subscriptions to the National Bulletin. We hope all county presidents as well as every member of the Board of Directors will plan to subscribe.

Our Historian has a complete record of the twelve years of the Auxiliary.

The Medical Society has generously contributed \$150.00 to our expenses. Our treasurer has been faithful in collecting dues and keeping an accurate record. She reports a budget suggested by the Finance Committee.

No project was undertaken without the consent of the Advisory Committee. The members of this committee, under the chairmanship of Dr. James C. Hill, have given of their time generously, and their advice and encouragement are appreciated.

The splendid cooperation of the office staff of the Iowa State Medical Society in mailing the reprint of the Auxiliary News to the members each month, in mimeographing and sending letters to the members with the reprint, in assisting with the essay contest and being helpful in many other ways, enabled us to carry on our work more efficiently.

The President had the pleasure of attending the National Auxiliary meeting in New York in June and the National Board meeting in Chicago in November.

The fall Board meeting was held in September when our National President, Mrs. V. E. Holcombe was our honored guest. Mrs. Holcombe commented on the fact that all the chairmen of standing committees were ready with their plans for the year.

The President has felt it her duty to keep the members informed of all activities of the Auxiliary through letters and the Auxiliary News in the JOURNAL. Many letters have been sent to county presidents and to all the members of the Board, and in January questionnaires were circulated with the request that one be passed on to the new president

for her information and the other returned to the state president. Most all of the counties returned the questionnaires. Copies of the Constitution and By-Laws were sent to all county presidents. The handbook and constitution were sent to state officers.

The President has had the pleasure of visiting Adair, Cass, Dallas, Guthrie, Dubuque, Jackson, Madison, Northwest Unit, Upper Iowa, Polk, Pottawattamie, Woodbury and Greene County Auxiliaries. In addition groups were addressed at Davenport and Ida Grove.

We close the year with a membership of 464, a gain of 124. Seven new counties have been organized, one a group of four counties in one unit, making a total of twenty units embracing twenty-seven counties. Boone and Story counties have also voted to organize as soon as the doctors give their consent, and the idea is under serious consideration in Ida and Worth counties.

It has been a pleasure to serve as president of this organization. The duties have been discharged as promptly and efficiently as possible. Many pleasant contacts have been made and we are more than ever convinced that "doctors wives are a fine intelligent group of women determined to do what they feel is right and helpful."

That more Iowa doctors' wives may have this helpful association with the Auxiliary members is the wish of your outgoing president.

Mrs. E. T. Warren, President

#### REPORT OF THE RESOLUTIONS COMMITTEE

*Whereas*, The Woman's Auxiliary to the Iowa State Medical Society in convention assembled has been the recipient of many courtesies:

*Be It Resolved*, That the Woman's Auxiliary express its appreciation to those who have extended their hospitality to us.

To the following chairmen and their committees: Mrs. F. H. Lamb for general arrangements; Mrs. E. G. Senty for the card party; Mrs. W. C. Goenne for the musical and tea; Mrs. J. R. Shorey for transportation; Mrs. H. B. Woods who has contributed to our exhibits; Mrs. E. J. Harnagel for taking care of our registration; Mrs. Karl Vollmer for decorations; and Mrs. H. A. Weis for the luncheons.

*Be It Further Resolved*, That appreciation be expressed to the committee on arrangements for the housing and comfort of our Convention and that gratitude be extended to: Dr. Nathan B. Van Etten, president of the American Medical Association; Dr. Frank P. McNamara, president of the Iowa State Medical Society; Dr. Earl B. Bush, president elect and Dr. Walter L. Bierring for their presence and greetings; Drs. John H. Randall, D. C. Konzett and J. A. Downing for their participation in our symposium; the Advisory Committee of the Iowa State Medical Society for its cooperation and advice throughout the year; the personnel of the office staff of the Iowa State Medical Society for their assistance; the Speakers Bureau and the Board of Trustees for their financial support; the press for its

courtesy and consideration; and our president, Mrs. E. T. Warren, who has served so loyally and conscientiously during the past year; and to all those unidentified persons whose thoughtfulness has made our convention a success.

#### Committee

Mrs. F. W. Mulsow, Chairman  
Mrs. D. F. Ward  
Mrs. H. I. McPherrin

#### CASS COUNTY

The Woman's Auxiliary to the Cass County Medical Society met Friday, March 28, for dinner at the Whitney Hotel in Atlantic. Dr. M. B. Weir of Griswold told of his recent trip to Cuba and showed a number of moving pictures. The organization voted to place the magazine *Hygeia* in the City Rest Room for the year, and to knit for the Red Cross. At the February meeting the following officers were elected: Mrs. R. M. Needles of Atlantic, president; Mrs. Joseph Schiff of Anita, vice president; and Mrs. Emil C. Petersen of Atlantic, secretary and treasurer.

Mrs. E. C. Petersen, Secretary

#### DALLAS-GUTHRIE AUXILIARY

The Woman's Auxiliary to the Dallas-Guthrie Medical Society met in regular session at Perry on April 17 after luncheon at the Maples Tea Room. The president, Mrs. C. E. Irwin, presided. Minutes of the last regular meeting and two called meetings were read and approved.

The new yearbooks were distributed and Mrs. E. J. Butterfield volunteered to have individual copies of the Society's constitution mimeographed for inclusion in the yearbooks. Those present voted that the Society subscribe for "The Bulletin" as a courtesy to the president. A motion was carried to amend our present constitution by adopting the recognized state form under consideration.

Mrs. C. E. Porter and Mrs. E. L. Bower were elected delegates to the State Convention. Mrs. H. F. Clark and Mrs. C. A. Nicoll were elected alternate delegates.

The dentists' wives of Dallas and Guthrie counties were guests of the day. Two excellent films on cancer and dental caries were shown and Mrs. E. L. Bower presented some interesting data on cancer.

Mrs. K. M. Chapler, Secretary

## DO YOU KNOW

That now is the time to begin to fortify yourself for the summer against the elusive fevers?

That many cases of typhoid fever are caused by apparently healthy humans who carry the germs in their intestinal and urinary tracts and who are careless in the handling of foods?

That typhoid fever is now rarer in the United States Army than in most healthful cities and towns



and that this is true because all soldiers are vaccinated against typhoid?

That typhoid vaccine is made from dead typhoid fever germs and that the vaccination is harmless?

That typhoid vaccination ordinarily protects one against the disease for from two to three years?

That those definitely exposed to typhoid infections should be revaccinated frequently?

That after World War I the death rate from typhoid fever dropped most among men between the ages of twenty-one and thirty-five (draft ages)?

That raw foods, unclean milk, sewers, poorly constructed privy vaults, and human excreta left on the ground to drain into water systems, are common sources of typhoid infection?

That typhoid fever can be controlled by the use of pure water, pasteurized milk, clean foods, proper sewage disposal and by the general practice of anti-typhoid vaccination?

That in preparing for a vacation you should select a place where drinking water and milk supply are pure, and when camping it is always best to boil drinking water unless you know that it is pure?

That travelers to doubtful sections of the world should fortify themselves by vaccination before leaving home?

That Rocky Mountain spotted fever is not confined to any particular section of the United States?

That it is spread by the wood tick and that it is a highly fatal disease?

That it was first known as the bitterroot disease, named for the Bitterroot Mountain area of western Montana where the disease was prevalent as early as 1880?

That it is called spotted fever because the victims of the disease have a spotted red rash, irregular in size and shape appearing on ankles, wrist and head after three days of illness, and spreading over the entire body as the disease advances?

That other symptoms of the disease are drowsiness, neck stiffness, high temperature and moderately rapid pulse?

That in 1937 in Iowa there were two unusual outbreaks of the disease and that cases usually develop in early June when the wood tick or common dog tick begins its season of activity?

That the hazards of Rocky Mountain spotted fever may be reduced by observing the following precautions?

Keeping on a lookout for ticks in summer camps, on picnic grounds, on hiking trips and on farms.

Making people "tick conscious" so that during the tick season they will inspect themselves morning, noon and night for evidence of ticks, and remove any before they have a chance to attack and engorge themselves.

Dipping dogs during the tick season.

Using spotted fever vaccine, which however is

expensive, and best reserved for use by those constantly exposed to the hazards of the disease.

That Bang's disease, brucellosis, malta and undulant fever, are one and the same disease?

That as late as 1930 it was a comparatively rare disease in Iowa?

That the spread of the disease is directly connected with infected livestock?

That the disease probably existed on the Island of Malta (from which it received one of its names) as early as 1880?

That David Bruce, an English physician, discovered the brucella germ (named for him) in the blood stream of one of his patients?

That Bang was responsible for much of the research on Malta fever and that is why it is also called Bang's disease?

That it has been shown conclusively that brucellosis in humans had its source in goats which were infected with a disease known as contagious abortion?

That the symptoms of the disease are weakness, sweating, chilling, persistent fever, loss of weight, aching and general discomfort?

That onset of the disease is usually gradual and that the above symptoms are particularly noticeable in the late afternoon?

That treatment consists largely in relieving symptoms and that medicinal preparations for shortening the duration of illness are now available?

That early diagnosis is possible and of utmost importance for effective and rapid cure?

That the disease may be prevented by the vaccination of livestock and by the pasteurization of dairy products?

That tularemia or rabbit fever was an obscure and unrecognized disease prior to 1908?

That it received its name from Tulare county, California, when Dr. George W. McCoy conducted an investigation of diseased ground squirrels and discovered the germ causing the disease?

That ticks are responsible for the spread of the disease among animals?

That tularemia is an acute infectious disease caused by *Bacterium tularense* and that it occurs in over twenty kinds of wild life and especially in wild rabbits and hares?

That human beings become infected by the contact of bare hands with the raw flesh and the blood of infected animals or by the bites of bloodsucking ticks and flies which have fed on such animals?

That symptoms of the disease include fever, chills, sweating, headache, vomiting, indefinite body uneasiness and prostration?

That you should be on the lookout for symptoms which are characteristic of these elusive fevers, that you should support ever legitimate agency working for their eradication and that you should consult your physician promptly if any of your family develops any of their symptoms.

## SOCIETY PROCEEDINGS

### Black Hawk County

More than seventy-five members and guests of the Black Hawk County Medical Society heard John M. Waugh, M.D., of the surgical department of the Mayo Clinic, Rochester, Minnesota, discuss Vaginal Hysterectomy, at a meeting held Tuesday, April 22, in Waterloo. Dr. Waugh illustrated his talk with colored motion pictures and slides of his actual work.

### Bremer County

The monthly dinner meeting of the Bremer County Medical Society and the staff of St. Joseph's Mercy Hospital was held Monday, April 28, at the Fortner Hotel in Waverly. The scientific program consisted of a transcription on The Acute Abdomen by Arnold S. Jackson, M.D., of Madison, Wisconsin.

P. K. Graening, M.D., Secretary

### Franklin County

The Franklin County Medical Society was addressed by Charles K. McCarthy, M.D., of the State Department of Health, Des Moines, on Tuberculosis, at a meeting held in Hampton, Monday, April 28.

### Greene County

The regular monthly meeting of the Greene County Medical Society was held at the Greene County Hospital in Jefferson, Thursday, May 22. F. J. Austin, M.D., of the State Department of Health, Des Moines, spoke on the proposed Red Cross Program for County Nursing.

John R. Black, M.D., Secretary

### Hardin County

Julian M. Bruner, M.D., of Des Moines, spoke on Appendicitis for members of the Hardin County Medical Society meeting in regular session Tuesday, April 29, at the Woods Hotel in Iowa Falls. The talk followed a six-thirty dinner.

W. E. Marsh, M.D., Secretary

### Johnson County

Members of the Johnson County Medical Society were guests of Mr. Robert E. Neff and Dr. Kate Daum at the University Hospital, for a six-thirty dinner Wednesday, May 7, preceding the regular meeting of the group. A symposium on diarrhea was presented with the following subjects and speakers: Case Presentations, R. A. Towle, M.D.; Diagnosis, D. W. Chapman, M.D.; Pathologic Changes, Robert B. Smith, M.D.; and Treatment, R. H. Lage, M.D. General discussion and questions followed the papers.

### Keokuk County

Officers elected at the annual meeting of the Keokuk County Medical Society held in Sigourney, Wednesday, April 23, are: Dr. Frank Adrian of Sigourney, president; Dr. Frederick D. Walk of South English, vice president; Dr. John Maxwell of What Cheer, secretary and treasurer; and Dr. Clarence L. Heald of Sigourney, delegate. Lieutenant Colonel Robert S. Shane, M.D., was guest speaker for the meeting, talking on the work of the state selective service board.

### Linn County

Dr. Howard L. Van Winkle of Cedar Rapids was chosen president of the Linn County Medical Society at the annual business meeting held Thursday, May 8, in Cedar Rapids. Other officers elected are: Dr. Cass T. Houser of Cedar Rapids, president-elect; Dr. Howard O. Young of Marion, vice president; Dr. Raymond J. Stephen of Cedar Rapids, secretary; and Dr. Blanche W. Houser of Cedar Rapids, treasurer.

### Pocahontas County

The Pocahontas County Medical Society held its regular monthly meeting Friday, May 16, at the home of Dr. Fred L. Blair, Jr., in Fonda. Arch S. McMillen, M.D., of Fort Dodge, addressed the society on Radiation Therapy for Pelvic Pathology.

John B. Larson, M.D., Secretary

### Polk County

The final meeting of the Des Moines Academy of Medicine and Polk County Medical Society before the summer recess was held Wednesday, May 21, at Younkers Tea Room in Des Moines. Elmer L. Sevringhaus, M.D., professor of medicine, University of Wisconsin Medical School, Madison, delivered an address on Endocrinology in General Practice; and Maurice H. Severs, M.D., associate professor of pharmacology, University of Wisconsin Medical School, Madison, discussed New Drugs.

### Tama County

The Tama County Medical Society entertained wives of the members and dentists and their wives at a six-thirty dinner meeting held in Gladbrook, Thursday, April 24. D. W. Ward, M.D., of Dubuque, spoke on The Control of Cancer.

### Washington County

The members of the Washington County Medical Society entertained their wives at their monthly



meeting Tuesday, April 29. The program was a film on The Development of the X-Ray, which was enjoyed by all present. Refreshments were served.

W. S. Kyle, M.D., Secretary

#### Webster County

Gordon R. Kamman, M.D., clinical assistant professor of nervous and mental diseases, University of Minnesota Medical School, Minneapolis, was guest speaker for the bimonthly meeting of the Webster County Medical Society, Wednesday, May 7, at the Wahkonsa Hotel in Fort Dodge. Dr. Kamman addressed the group on The Endocrine Glands in Neuropsychiatric Disorders. A feature of the program was the showing of colored motion pictures on the Vitamin B Complex.

#### Woodbury County

Recent Advances in the Knowledge of Thyroid Disease was the subject discussed by Samuel S. Hayne, M.D., of Rochester, Minnesota, at the regular meeting of the Woodbury County Medical Society held at the Martin Hotel in Sioux City Thursday, April 24. After the meeting a forty-five minute sound film, Studies on Human Fertility and Methods for the Control of Conception, was shown.

W. K. Hicks, M.D., Secretary

#### Iowa and Illinois Central District Medical Association

The annual meeting of the Iowa and Illinois Central District Medical Association will be held Thursday, June 26, at the Outing Club in Davenport. The following scientific program will be presented during the afternoon:

3:00 p. m. John A. Toomey, M.D., professor of clinical pediatrics and contagious diseases, School of Medicine, Western Reserve University, Cleveland, Ohio, The Pathogenesis of Poliomyelitis with Some Remarks about the Treatment.

4:00 p. m. Howard K. Gray, M.D., associate professor of surgery, The Mayo Foundation, Rochester, Minnesota, Cancer of the Stomach.

5:00 p. m. Otto H. Schwarz, M.D., professor of obstetrics and gynecology, Washington University School of Medicine, St. Louis, Missouri, Hyperplasia of the Endometrium.

The dinner, to which the ladies are invited, will be held at six-thirty, after which medals will be presented to two members who have been in practice for fifty years. Dr. Karl Vollmer of Davenport will make the presentation to Dr. Edward F. Strohbehn of Davenport, and Dr. L. C. Howe of Muscatine will do likewise for Dr. Thomas F. Beveridge of Muscatine. The guest speaker for the evening session will be Morris Fishbein, M.D., of Chicago, Illinois, editor of the Journal of the American Medical Association, whose subject is American Medicine Prepares.

James Dunn, M.D., Secretary

#### Northwest Iowa Medical Society

The annual meeting of the Northwest Iowa Medical Society was held at the Arlington Hotel in Sheldon, Tuesday, April 29, with a banquet at seven o'clock and the following program: Injuries and Infections of the Eye as Seen by the General Practitioner, James E. Reeder, Jr., M.D., of Sioux City; and General Preparedness and Our Present Military Status, Colonel R. A. Lancaster of Des Moines.

#### PERSONAL MENTION

Dr. Walter L. Bierring of Des Moines, was re-elected secretary of the Federation of State Medical Boards of the United States, at the recent meeting of the Congress on Medical Education and Licensure, conducted by the American Medical Association in Chicago.

Dr. James B. Overton, recent assistant physician at the Utah State Hospital, Provo, Utah, has accepted the position of assistant physician at The Retreat in Des Moines. Dr. Overton was graduated in 1931 from Washington University School of Medicine, St. Louis, and served his internship at the Wisconsin General Hospital in Madison. After a year of resident staff membership for the Phipps Clinic at Johns Hopkins University in Baltimore, he engaged himself in various phases of institutional psychiatric practice.

#### DEATH NOTICES

Anderson, William Elmer, of Washington, aged seventy-seven, died May 7, in New Hampton of an embolism, while en route home from Rochester, Minnesota. He was graduated in 1894 from the Chicago Homeopathic Medical College, and at the time of his death was a member of the Washington County Medical Society.

Henry, Rex Vale, of Hedrick, aged sixty-six, died April 17, in Ottumwa after a week's illness. He was graduated in 1901 from Creighton University School of Medicine, Omaha, and had long been a member of the Keokuk County Medical Society.

Myers, Lynn Lewis, of Sheldon, aged forty-seven, died April 27 as the result of a heart attack. He was graduated in 1916 from the State University of Iowa, College of Medicine, Iowa City, and had long been a member of the O'Brien County Medical Society.

Wright, Jane Drusie McIntosh, of Clear Lake, aged seventy-three, died April 26 of injuries received in a fall on March 23. She was the wife of Dr. Charles E. Wright, also of Clear Lake. She was graduated in 1898 from the State University of Iowa, College of Medicine, Iowa City, and at the time of her death was a member of the Cerro Gordo County Medical Society.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. TOM B. THROCKMORTON, Des Moines

DR. JOHN T. MCCLINTOCK, Iowa City

DR. WALTER L. BIERRING, Des Moines

DR. R. T. LENAGHAN, Clinton

DR. HENRY G. LANGWORTHY, Dubuque

## Winneshiek County Physicians

J. J. DALY, M.D., Decorah, Iowa

Let this sketch begin with a few strokes for background. The story is a mere episode. It is composed of many details but not more than could be encompassed in the lifetime of one individual as for instance the man who died December 31, 1940, at 101 years of age at the Soldiers Home in Marshalltown. When this man was born the county was occupied only by Indians, soon, however, to be displaced by governmental order. Indians had the run of the land during an estimated 10,000 years. It is true that men from France also had roamed hereabouts over a period of 264 years. It is not known what other men may have been here in the 50,000 years that the genus homo has been on earth. An incident of the glacial period also points to the episodic characterization of this sketch. This county is part of the driftless area, which was an island-like portion of land in a sea of ice; 500,000 years earlier it actually was an island in a sea of water and had so existed for 250,000 additional years. On this county and vicinity, many suns had shone while the rest of Iowa slept under the dark depths of ocean.

To this ancient land in 1845 came the first doctor of the group which is to be sketched. This doctor was Frederick Andros, a young man forty-one years of age, under government contract to give medical care to soldiers at Fort Atkinson and Indians at the Agency on the nearby flats. A few years later he returned to civilian practice at Garnavillo, McGregor and Decorah. At St. Paul in 1894 his eventful career as a pioneer came to an end.

Settlement began in 1848 near Castalia and six months later at the spring in Decorah. Medical arrivals in Decorah were Dr. Bolles (1821-1906) in 1850; T. J. Hazlett (1826-1854) in 1851; J. M. Green (1811-1890) in 1852; H. C. Bulis (1831-1897) in 1854; F. S. Northrup (1824-1876) in 1854; Wm. Parliman (1803-1896) in 1857; W. F. Coleman (1825-1886) in 1857; and J. Wilbur Curtis (1839-1879) in 1857.

Arrivals at other points in the county were: Dr. Sam Riddle at Moneek in 1852, to Nora Springs in 1853; A. B. Hanna at Moneek in 1853, to Elkhader in 1861; W. C. Battey at Hesper in 1853; J. W. Mattoon at Freeport in 1854, to Waukon; J. S. Green at Hardin in 1854, to Postville in 1867; Fordyce Worth at Hesper in 1854; R. Small at Rossville in 1856, to Ossian in 1868, and to Decorah in 1871; E. H. Hazen taught school at Fort Atkinson in 1857 and moved elsewhere in Iowa to fame; A. N. Knutson began practice in 1854, came to Iowa in 1880, and thence to Decorah in 1892; Ed Cartright at Lansing in 1860, to Frankville in 1870, and to Decorah in 1873. S. B. Chase, after four months in Decorah in 1855, moved to Osage.

We had physicians living a little outside of the county but having patients here, who were distinguished by being not only early settlers but also by having been born near the close of the eighteenth century. They are as follows: Dr. Hinkley, born in 1793, long in practice at Clermont; Dr. Whitford at Hawkeye, born in 1799, and Dr. Houghton at Lansing, born in 1801. To the young pioneer physicians of the fifties, these men were of the "old school"; as to us of the nineties were the bearded faces, silk hats and gold-headed canes of the doctors we venerated.

Medicine is truly an ancient art. Its practitioners are always either old or young; and too they are ever good or bad or indifferent. Not all of a doctor's success is measured by his knowledge of ions and biologic reactions. His personality—call it genial, kindly, taking, understanding, sincere or noble—is a determining aid in securing worthy results from medical contacts either in youth or age. These early doctors, like other settlers, generally were young, strong and full of vitality. They were the most enterprising among the peoples they left behind in Maine, Vermont, New Hampshire, New York and Pennsylvania. They had the advantage of contact, for a time at least, with well known colleges. No wonder so many of them



served the new communities in positions of trust and leadership. Often they taught school and served as superintendents of schools during such time as medical work was limited; again they were mayors, postmasters or legislators. Medically they were advanced and skilful in the use of the limited equipment and the medical lore then available from the prevailing short courses. Above all they promised discernment, gumption and adaptation. And too often to them, came what N. A. Drake, first permanent physician at Ossian, 1858-1875, declared was "the greatest recompense ever earned, a 'God bless you, Doctor,' from a rescued patient."

The organization to which Winneshiek County physicians, forty-three of them, attached themselves was the North Iowa Medical Association organized with Dr. Andros, pioneer, as first president, in Clayton County in 1859. The membership, nine at first, was extended to include most of the doctors in the four or five counties of north-eastern Iowa. Winneshiek doctors were especially active as is shown by seventy-four of one hundred eleven subjects discussed in the meetings of the forty years of its existence. Here is a partial list: Dr. Andros spoke on six; J. S. Green, eight; J. S. Roome, eight; E. T. Wilcox of Frankville, five; J. Wilbur Curtis of Decorah, seven; John Shepherd of Postville, four; and P. M. Jewell of Ossian and Decorah, twenty. The society ceased to exist in 1904. Since the reorganization of the American Medical Association at that time, the county society has been active and its membership has been 100 per cent for several years.

The Decorah Hospital was built in 1914, managed by a citizens' committee and supervised by Mrs. Lutie Larson. Seventeen years later the management was taken over by the Lutheran Hospital Association, with Mrs. Genevieve Hilger as superintendent (1931 to 1938). A new addition to the structure was built. With thirty-eight beds, and an organized staff of physicians, residents in both this and adjoining counties, standardization was accomplished in 1935. It is the smallest hospital in the United States accredited by the American College of Surgeons. It is fully equipped, possessing up-to-date fracture apparatus, a new x-ray machine, a technician and is served by pathologist, Dr. F. P. McNamara of Dubuque, past president of the Iowa State Medical Society.

Certain physicians of the county are noteworthy for various reasons, usually not related to their medical work. The following dates refer to the years of practice of the subject in the county:

J. M. Green, 1852-1890, made loans to pioneers from a desk in the famous Weiser bank.

H. C. Bulis, 1854-1897, a lifetime of political preferment: county superintendent, supervisor, senator, lieutenant governor, trustee of the State University of Iowa and president of the Iowa State Medical Society.

W. F. Coleman, 1857-1885, first mayor and holder of other offices.

E. H. Hazen, 1857 taught at Fort Atkinson, later eye and ear specialist, professor at State University of Iowa and head of largest Iowa infirmary at Davenport, co-existent with Grimes' infirmary at Council Bluffs and Des Moines.

N. A. Drake, 1858-1875, later division surgeon of the Rock Island at Kentucky.

W. C. Battey, 1853-1871, at Hesper, formed a company to fight the Sioux in Spirit Lake uprising, got as far as Austin.

Harriet Bottsford Amy, 1875-1929, one time instructor in Women's Hospital Medical College, Chicago.

P. M. Jewell, 1880-1914, outspoken advocate in both medicine and politics.

F. W. Daubney, 1883-1912, mayor and local celebrity.

Austin Pegg, 1877-1894, federal indictment in a pension deal.

Wm. Parlman, 1857-1896, born 1803 died 1896, linking the old with the new.

F. S. Northrup, 1854-1887, murdered in Hancock county.

A. B. Hanna, 1857-1861, postmaster at Moneek, now a ghost town tricked out of the county seat.

E. H. Williams, 1893-1897, moved to New York, brother of author of "A Historian's History of the World."

J. T. Billington, 1861-1890, first Scandinavian doctor in the county.

G. M. Stevens, 1894-1906, possessor of first x-ray machine in Decorah, moved to Los Angeles, health officer there.

R. Small, 1856-1890, popular lecturer on chronic diseases.

F. V. Mohn, 1892-1896, pompous demeanor.

S. P. Dahl, 1913-1916, rode crest of appendectomy wave.

C. Hoeg, 1865-1932, gladiolus expert.

A. C. Smith, 1873-1906, retired to California; C. C. Smith, his son, retired, now resident in Decorah and writing nature sketches.

R. M. Strong, 1887, died at the age of 101 at Toledo, Ohio, built Episcopal rectory in Decorah.

O. O. Svebakken, 1906-1934, killed on tour in Florida.

T. N. Stabo, 1895, present Norwegian Consul in Decorah.

J. S. Roome, 1866-1897, at Calmar, Iowa Assembly, one of five brothers, all physicians; one of them is C. D. Roome of Ridgeway and Cresco.

F. A. Hennessy, 1908-1940, Calmar, president of the Iowa State Medical Society 1939.

A. F. Fritchen, 1920-1940, Lieutenant Commander of United States Navy, 1941.

In keeping with the prevailing tendency in towns today to present a luxurious front for places of business, a number of Winneshiek County physicians have modern, attractive and serviceable offices. Doctors Kuhn, Larson and Hagen of Decorah have each an enviable suite, and Doctors Hospodarsky of Ridgeway and Holtey of Ossian, have newly built accommodations for treatment of their patients. Group practice has never been established in this county.

Finally 191 doctors have resided in this county with twenty-two deaths. In Decorah alone eighty established themselves. At present there are nine doctors practicing in Decorah; and five others elsewhere in the county. The Iowa State Department of Health established a district service for north-east counties in 1940 with headquarters in Decorah. Dr. Harry H. Ennis is director of the group consisting of a sanitary engineer and a director of public health nursing. A nurse is employed by Winneshiek County and the Red Cross; another nurse is engaged by Decorah schools.

Significant because it indicates how truly American were the early doctors in Winneshiek county is the fact that among the 191 physicians who have practiced here only five carried credentials from foreign schools. J. J. Knepper claimed University of Paris, France; Austin Pegg, McGill University, Montreal; A. C. Smith, C. Hoeg and T. Stabo, University of Christiana, Norway. Twenty others were born abroad but had connections with American colleges. Doctors of Norwegian birth were Knutson, Billington, Mohn, Rustad, Seehus and P. K. Dahl; Christiansen and Andersen were Danes; Mrs. Hoffstrom was from Sweden; Cartright and Fellows were born in England; R. Small and R. M. Strong in Scotland; McEnany in Ireland; Janss in Germany and J. S. and C. D. Roome, Potter, McLean, A. J. and P. B. McLaughlin in Canada.

Medical schools by states and number of affiliates of each have representatives as follows: Iowa, fifty-two; Illinois, sixty-two; Pennsylvania, nine; Ohio, eight; Kentucky, New York, Michigan, Minnesota, five each; Rhode Island, Maine, Maryland, Vermont, Wisconsin and Nebraska, one each.

## IOWA MEDICAL GOLFERS IN SEVENTH ANNUAL TOURNAMENT

On Tuesday afternoon, May 13, a goodly number of "medics" tramped wearily over the hills of the Davenport Country Club in our Seventh Annual Golf Tournament. There were no casualties and everyone finished up to the nineteenth hole in reasonably good condition.

When the smoke of battle cleared away and the scores were tabulated, it was evident that we had several very able golfers. Drs. Dutton of Van Horne, Deering of Onawa, and McCoy of Des Moines were tied for low medal score with 84 each. Lack of time prevented a play off, and scores were figured as match play with Dr. Deering winning the trophy. Every player received some recognition for his endeavors, including the oldest player, Dr. D. T. Nicoll, of Mitchellville, who finished the eighteen holes as easily as he seems to have taken the first fifty years of practice.

Dr. Deering, the retiring president, and myself as secretary, wish to thank all who contributed to the success of this meeting, including Dr. Walter Matthey, the local chairman, whose able planning was of the best.

We also wish to thank the following organizations who generously contributed prizes:

Iowa State Medical Society  
Mead Johnson and Company  
Bard Parker Company  
Sharpe and Dohme  
General Electric X-Ray Corporation  
Standard Chemical Company  
E. R. Squibb and Sons  
National Drug Company  
Carroll-Dunham-Smith Company  
Upjohn Company  
A. S. Aloe Company  
Abbott Laboratories  
V. Mueller and Company  
Columbus Pharmacal Company  
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We hope to have a large number of golfers out for our Eighth Annual Tournament next year in Des Moines.

Charles A. Nicoll, Panora, President  
John H. Matheson, Des Moines, Secretary



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**ARTHRITIS AND ALLIED CONDITIONS**—By Bernard I. Comroe, M.D., instructor in medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1940. Price, \$3.50.

**OBSTETRICS AND GYNECOLOGY**—Edited by Fred L. Adair, professor of obstetrics and gynecology, University of Chicago. Two volume illustrated set. Lea and Febiger, Philadelphia, 1940. Price, \$20.00.

**THE INJURED BACK AND ITS TREATMENT**—Edited by John D. Ellis, M.D., Chicago. Charles C. Thomas, Springfield, 1940. Price, \$5.50.

**PHYSICAL DIAGNOSIS**—By William Nance Anderson, M.D., associate clinical professor of medicine, University of Southern California, School of Medicine, Los Angeles. Lea and Febiger, Philadelphia, 1940. Price, \$4.75.

**MEDICAL NURSING**—By Edgar Hull, M.D., clinical professor of medicine, Louisiana State University School of Medicine, New Orleans. F. A. Davis Company, Philadelphia, 1940. Price, \$3.50.

**APPLIED PHARMACOLOGY**—By Hugh Alister McGuigan, M.D., professor of pharmacology and therapeutics, University of Illinois, College of Medicine. Illustrated. The C. V. Mosby Company, St. Louis, 1940. Price, \$9.00.

**PHYSICAL DIAGNOSIS**—By Ralph H. Major, M.D., professor of medicine, University of Kansas. Second edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price, \$5.00.

**OBSTETRICS IN GENERAL PRACTICE**—By J. P. Greenhill, M.D., professor of obstetrics and gynecology, Loyola University Medical School. The Year Book Publishers, Chicago, 1940. Price, \$3.50.

**VITAMIN THERAPY IN GENERAL PRACTICE**—By Edgar S. Gordon, M.D., associate in medicine, and Elmer L. Severinghaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1940. Price, \$2.75.

**THE DOCTOR AND THE DIFFICULT CHILD**—By William Moodie, M.D., Medical Director, London Child Guidance Clinic. The Commonwealth Fund, New York, 1940. Price, \$1.50.

**THE 1940 YEAR BOOK OF GENERAL MEDICINE**—By George F. Dick, M.D., J. B. Amberson, Jr., M.D., George R. Minot, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1940. Price, \$3.00.

**OFFICE UROLOGY**—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1940. Price, \$10.00.

## BOOK REVIEWS

### APPLIED PHARMACOLOGY

By Hugh Alister McGuigan, M.D., professor of pharmacology and therapeutics, University of Illinois, College of Medicine. Illustrated. The C. V. Mosby Company, St. Louis, 1940. Price, \$9.00.

In the opinion of this reviewer, there are many textbooks on pharmacology, but only one on applied pharmacology. Being quite familiar with Dr. McGuigan's work during his many years as a teacher and investigator, I believe his 1940 Applied Pharmacology is an outstanding volume and a reward for his diligence in searching for the true action of drugs and therapeutic agents.

The volume is very readable and scientifically arranged, and though covering the subject completely is not too large for a textbook. It is impossible to designate one chapter as better than another, but those that most appealed to the reviewer were on the circulation of the blood, the pharmacology of the liver, the chemotherapy of syphilis, and the author's chapters on vitamins and hormones. R. L. P.

### THE THERAPY OF THE NEUROSES AND PSYCHOSES

By Samuel H. Kraines, M.D., associate in psychiatry, University of Illinois, College of Medicine. Lea and Febiger, Philadelphia, 1941. Price, \$5.50.

This is not just another textbook of psychiatry but a five hundred page handbook of practical treatment of the neuroses and psychoses for the general practitioner. The style of writing and presentation is unusually clear and smooth.

Formal classification is cast aside and the subject is approached from the point of the symptoms which first confront the physician, such as gastric hyperacidity, essential hypertension, impotence or spastic colitis. From this point the author works back to the offending conflict and explains as he goes, the various psychologic mechanisms involved in the neurosis, more particularly those of tension and symbolism. He insists that neuroses are not diseases in themselves but types of response to troublesome situations. Many well chosen case histories are used to illustrate the various formulations.

The chapters dealing with the autonomic nervous system, general characteristics of the neuroses, the prognosis and curve of improvement and the principles of practical psychotherapy will be found of special interest and value. R. C. D.

### THE INJURED BACK AND ITS TREATMENT

Edited by John D. Ellis, M.D., Chicago. Charles C. Thomas, Springfield, 1940. Price, \$5.50.

This is not an ordinary book on backache written by one man; this book is composed of a series of separate articles written by nine different men on the various causes, conditions and injuries to the muscles, bones and nerve structures of the back. Contributors are Drs. H. Earl Conwell of Birmingham, Loyal Davis of Chicago, Nathan S. Davis, III, of Chicago, Ralph K. Ghormley of Rochester, Hale A. Haven of Seattle, Professor Sir Arthur Keith of London and Robert B. Osgood of Boston.

This book gives one a wide generalized viewpoint of the various causes of back difficulties, and a

broad knowledge of how to attack one of the most difficult of all medical problems. It not only indicates the means of arriving at a diagnosis but aids in deciding the type of treatment indicated. The following gives an idea of the various sections of the book.

Man's posture and notes on its evolution are discussed in the first chapter; in the second, backache as a symptom of visceral disease is taken up; in the third, a routine examination of the injured back which is very complete and necessary in arriving at a diagnosis, is described. The fourth chapter takes up recent compressed fractures without cord injuries and their management, and the fifth article is a discussion on the neurosurgical aspects of the injured back. The sixth article covers the rôle of the articular facets in low back pain and the seventh monograph is on faulty body mechanics and back injuries, their etiologic and prognostic significance. The eighth paper is on the relation of trauma to certain inflammatory, degenerative diseases and anomalies of the spine; and the last chapter describes the treatment of minor injuries.

This book can be used by all traumatic neurologic and orthopedic surgeons to a good advantage and would help greatly any general practitioner who sees very many back injuries.

D. C. W.

#### DISEASES OF THE DIGESTIVE SYSTEM

Edited by Sidney A. Portis, M.D., associate clinical professor of medicine, Rush Medical College, University of Chicago. Lea and Febiger, Philadelphia, 1941. Price, \$10.00.

This is something new in the field of gastro-enterology. A series of monographs is presented by fifty outstanding contributors around the country who have made a special study of the particular topic on which they have written. The list includes Crohn on regional ileitis, Schindler on gastritis and gastroscopy, Necheles and Ivy on physiology, and Eusterman on gastric syphilis and benign tumors of the stomach. Hurst of London has a chapter on mucous colitis. Diet and nutrition are covered by Kate Daum, dietitian at the University of Iowa Hospitals, and include her new list of diets and menus which are very useful.

An innovation is the complete coverage of the relation of the gastro-intestinal tract to the other systems of the body. For example, there is an interesting and clear-cut explanation of the gastric and intestinal symptoms often found with nephritis, heart disease, diabetes and endocrine disorders. Part I takes up the background of gastro-enterology including history, anatomy, physiology and the mechanism of pain. Part II deals with etiology of disease of this system. Parts III to V discuss the individual ailments of the various groups of gastro-intestinal and allied organs.

This book correlates gastro-enterology with medi-

cine as a whole, and is therefore useful for the entire profession. The illustrations are exceptionally good. The reviewer considers this volume a classic.

A. M. G.

#### ROENTGEN INTERPRETATION

By George W. Holmes, M.D., clinical professor of roentgenology, Harvard Medical School; and Howard E. Ruggles, M.D., clinical professor of roentgenology, University of California Medical School. Sixth edition, Lea and Febiger, Philadelphia, 1941. Price, \$5.00.

Those who are not familiar with this brief text will find it of the utmost value, not only because of its brevity but also because of its completeness. For those who wish to study a particular disease at greater length there are many references at the end of each chapter. The illustrations are numerous, there being 246 in 350 pages. There is an extensive table listing the appearance of centers of ossification in the fetus, at birth and union of ossification centers. A tabulation of the findings in the common bone lesions for use in differential diagnosis is included, as well as many other tables and charts useful in diagnosis. Of particular benefit are the introduction and the first and second chapters which should be studied by everyone who does any roentgenography.

For those who already have a copy of the fifth edition of this book, the subject matter has been reviewed and brought up to date; several illustrations have been replaced and others added. Most of the references are in the English language. This book is well worth its price.

A. B. P.

#### OBSTETRICS IN GENERAL PRACTICE

By J. P. Greenhill, M.D., professor of obstetrics and gynecology, Loyola University Medical School. The Year Book Publishers, Chicago, 1940. Price, \$3.50.

A small investment of time will net the reader of this book large dividends. The "to the point thoroughness" with which the author has presented the pertinent facts of prenatal care, labor, delivery and postpartum care, and his direct recommendations for the problems arising in the general run of obstetric practice, will make this book a valuable aid to the busy doctor.

The suggestions as to differential diagnostic problems are brief and practical. The discussions of indications and contraindications are direct and clear. Especially good are the chapters on prenatal and postnatal care, mechanism of labor and x-ray in obstetrics. The discussions of analgesia and anesthesia, asphyxia neonatorum and obstetric endocrinology are packed with information. A good chapter on the care of premature babies is included.

Brevity, clarity and practicability are the essentials of this book.

R. W. S.



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### RECENT THERAPEUTIC ADVANCES AND THEIR APPLICATION TO MILITARY NEEDS\*

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Medicine is a constantly progressive science and our decade finds us possibly more adept than previously at coping with our various problems. However, more problems resulting from new or previously unrecognized conditions require further advances in medicine and the effect of the former upon our methods of living, and of dying, demands continuous diligence in an attempt to keep the scales balanced. Various groups of clinical and research workers furnish the offensive in this struggle and they occasionally find a solution for some one of our needs, furnishing us with a new weapon in the battle against diseases or injury and their possible complications.

As military surgeons, we are especially interested in advances in the control or treatment of the various and numerous conditions arising as a result of war activities or the preparation for such activities. There have been made available to the medical profession recently data concerning several preparations which, besides their value in civilian practice, would seem to have a special promise for certain military medical requirements. Among the most important of these are:

1. The sulfonamide group of drugs.
2. Tetanus toxoid.
3. Influenza vaccine.
4. Vitamins, especially A, B<sub>1</sub> and B<sub>2</sub>.
5. Certain antiseptic dyes.
6. Blood plasma.
7. Yellow fever vaccine.
8. The barbiturates.

It is desired to discuss these briefly and to indicate how and to what extent they may prove

of value during the preparation for a military emergency as well as actual war conditions.

#### THE SULFONAMIDES

There is a tremendous literature concerning the sulfonamide group, which includes, of course, the various preparations of sulfanilamide, sulfapyridine, sulfathiazole, and more recently sulfaguanidine. These drugs have proved of inestimable value in the treatment of many types of infections, and we have learned something of the relative value of each in various conditions. For instance, it is at present felt that sulfanilamide is most effective in gas gangrene, hemolytic streptococcal infections, lymphogranuloma venereum, meningococcal infections, Streptococcus viridans infections, trachoma and urinary tract infections due to streptococci or Proteus. Sulfapyridine is more valuable in gonococcal, pneumococcal and staphylococcal infections; while sulfathiazole has the greatest promise in Escherichia coli tissue infections and urinary tract infections due to the aerogenes, pyocyaneus, coli, and staphylococcus albus and aureus. Sulfathiazole is also very effective in gonococcal, pneumococcal and staphylococcal infections, probably almost as much so as sulfapyridine, and has much fewer unpleasant side effects. Some patients who cannot take sulfapyridine do well on sulfathiazole. As for sulfaguanidine, it apparently had some promise in such gastro-intestinal conditions as bacillary dysentery and as a preoperative antiseptic prior to surgery of the intestines (colon resection, etc.). More recent experience, including a very modest trial at Walter Reed Hospital, does not indicate that this promise has been borne out.

The above, of course, implies that to secure the best results a reliable bacteriologic culture should be available in a given case. To wait for such a study during actual combat conditions would mean that the soldier would be denied the advantage of the sulfonamide group of preparations until he had been transferred back to a fixed installation for treatment. Unless we speed up

\*Presented before the Ninetieth Annual Session, Iowa State Medical Society, Davenport, May 14, 15 and 16, 1941.

evacuation by sending the sick and wounded in one move to such a fixed hospital, and this I believe to be feasible in many situations, a serious delay in the initiation of this form of treatment is unavoidable; such delay sacrifices much of the possibilities of the drug. As Perrin Long points out, "The early use of these chemotherapeutic agents in the treatment of susceptible infections is of paramount importance if prompt, clear-cut clinical results are to be obtained."

There is an entirely practicable alternative, and that is to use some one of the different compounds as soon as a soldier, whose condition may suggest such treatment, is seen, the object being a prophylactic measure until more detailed study can be had. The sodium salts of sulfapyridine and of sulfathiazole are available for intravenous administration, but any of these preparations are very effective orally, and use in the field had best be restricted to this method of administration, leaving the intravenous treatment, when and if indicated, to those hospitals better fitted for such procedures.

The question of course arises as to the safety of giving the drug in large enough doses to be effective without having the facilities for estimating the blood concentration. Also it might be difficult or impossible to maintain the dosage schedule exactly or to insure the fluid intake that is advisable during its use. Undoubtedly harm may be done at times, and occasionally a fatality may result, but these accidents or incidents will be so relatively infrequent that they will not constitute real contraindications to such a method of usage.

The concomitant use of barbiturates in more than occasional sedation dosage would have to be guarded against. Just where the danger line comes in the simultaneous use of the two drugs we do not know, but it seems definitely established that there is danger if such usage is continued and apparently this is not due to individual susceptibility.

The local use of the drug in superficial infections and in deeper wounds offers great promise. In Europe sulfathiazole is replacing sulfanilamide as a local application to wounds. It is felt there that it has considerably more action against the anaerobes and the gas bacillus than has sulfanilamide. A new sulfonamide compound, still in the experimental stage and not yet on the market, is sulfadiazine. What action, and especially what selective action, it may have is of course problematical.

There is also in lobar pneumonia the added advantageous factor of time saved by the use of sulfathiazole instead of serum, although it is occasionally advisable to combine the two types

of treatment. Fewer doctors, nurses and orderlies are required to treat a given number of pneumonia cases with sulfathiazole than with serum.

Obviously when using the drug the contraindications to its use and close observation for any toxic manifestations are necessary. So used, it is apparent that we have in this agent a most potent factor for convenient, practical and expeditious prophylaxis and treatment of many serious or potentially serious conditions frequently intruding themselves into the field of the military surgeon.

The Surgeon General of the Army has considered the use of these preparations so important that he issued on December 5, 1940, a circular letter (No. 81), setting forth the data then available as to their use in hemolytic streptococcal infections, scarlet fever, meningococcal meningitis, purulent meningitis, pneumonia, gas bacillus infections and staphylococcal infections. The Surgeon General's Office is in process of purchasing 2,000,000 prophylactic doses of sulfanilamide, each dose consisting of six grams of the drug in one-half gram tablets, placed in a flat cellophane-wrapped, spill-proof, aluminum box, with directions to take two tablets with a sip of water every five minutes if wounded. The cellophane wrapping is provided with a string-tearing mechanism, which, if necessary, can be pulled with the teeth to open. These boxes of sulfanilamide can be slipped into the webbing pouch alongside the metal-contained first aid dressing. The idea is to have available a full initial dose of sulfanilamide for every wounded soldier, whether other medical attention is available or not. One six gram initial dose will not often do any harm, and it may frequently be a life-saving measure. Further dosage with sulfanilamide is to be undertaken only upon the advice of a medical officer.

In Britain it has been the custom to sprinkle all war wounds with sulfanilamide after debridement, and the patients are then started at once on the drug by mouth as a prophylaxis against pyogenic and anaerobic infections. It is considered a very effective agent against the anaerobes.

#### TETANUS TOXOID

Tetanus has always been one of the most urgent complications which the military surgeon has to meet, and naturally the types of wounds that he encounters, penetrating, lacerated, with comminution of bone and generally soiled with particles of clothing, equipment or earth, are the types in which this infection is so prone to develop. In the past we have had to depend upon antitoxic serum and it has not always been possible to administer this as soon as one would like to do so.



Some effective prophylactic measure has long been sought and finally there has been developed the agent which we know as tetanus toxoid. It is known that the British consider it invaluable and it has been stated by an American observer that no cases of tetanus have occurred in wounded individuals who had previously been immunized with the toxoid. In Britain there have been very few reactions from its administration. It was reported at one time that active immunization with toxoid had been made compulsory in the German army, although it is also known that previous to last summer it was not in use in that army. Its use in the French army was compulsory and French medical journals reported at one time that 1,500,000 individuals had been immunized with entirely satisfactory results. We hear also that it is compulsory in the Italian army, and that in both the French and Italian armies the tetanus toxoid is administered in combination with diphtheria toxoid and typhoid and paratyphoid vaccines.

The use of tetanus antitoxin has been fairly satisfactory, but it has had the disadvantage of all preparations of horse serum in that certain individuals who are allergic respond unfavorably and occasionally death results. Even in those taking the antitoxin without untoward reaction at the time, serum sickness not infrequently occurs. Also, those receiving the antitoxin are rendered susceptible to anaphylactic reactions if the occasion arises to administer a serum at some later date, unless that serum be from an animal of a different species. Since various types of serums have been in use in this country for such conditions as pneumonia, diphtheria, scarlet fever, erysipelas and gas gangrene, it is advisable to limit its use wherever it is possible to do so.

The protection afforded against tetanus by prophylactic doses of tetanus antitoxin is, as you know, very transient. The protective bodies disappear from the patient's blood stream in a fortnight. Occasionally they disappear so rapidly that a patient with a deep and badly contaminated wound, especially if it has not been thoroughly cleansed of foreign material, may still develop tetanus in spite of the fact that prophylactic antitoxin was administered promptly after the injury. In such cases it may be necessary to administer successive prophylactic doses of antitoxin at four to seven-day intervals. A soldier once wounded and given tetanus antitoxin must have the antitoxin repeated each time he is subsequently wounded or an old wound is re-operated.

The new approach to the problem of tetanus prophylaxis is by the subcutaneous or intramuscular injection of small amounts of tetanus toxoid.

This preparation is the broth filtrate of tetanus cultures previously detoxified with formalin and it produces in the individual an active response characterized by the production of antitoxin in his own blood. This antitoxin concentration does not reach a high degree after a single injection of toxoid, but within a few days after a second dose or subsequent doses of toxoid the antitoxin concentration is markedly increased and it has been demonstrated that the antitoxin content of the blood is almost uniformly much higher than that following the customary prophylactic dose of 1,500 units of tetanus antitoxin. The formation of the antitoxin following the use of toxoid is sufficiently prompt to protect the wounded individual against tetanus if the readministration of the toxoid is effected within the first twenty-four hours, the individual as the result of his primary immunization being highly sensitive, and after a second or subsequent injection the antitoxin content of the blood remains relatively high for a period of several months or perhaps years, in contradistinction to that existing for only a few days after the prophylactic injection of tetanus antitoxin.

The reaction to the administration of the toxoid is ordinarily mild and, since there is no animal serum in the toxoid, sensitization rarely occurs. The liquid toxoid is initially given subcutaneously in doses of one cubic centimeter at intervals of three weeks for three doses. It is further advisable to give a single dose upon entry into the combat zone and still another if the individual is wounded. So given, protection against tetanus is almost complete.

With the use of tetanus toxoid, antitoxin will be required only in the treatment of cases of clinical tetanus that may occur, or for the passive protection of any wounded individual who may not have been adequately immunized with toxoid. In such a case a single dose of antitoxin should be administered and active immunization with toxoid started at the same time. The Surgeon General of the Army has just recently issued instructions (circular letter, No. 34, April 16, 1941) concerning tetanus toxoid and the details of its use. It is being administered to certain members of the military service in instances where groups are so situated as to indicate its use.

#### INFLUENZA VACCINE

During the last war clinical influenza, and especially its complication, pneumonia, was the most serious disease among United States troops. Since that war viruses have been isolated which under experimental conditions produce clinical influenza. The first one isolated, now known as the A virus,

has been rather extensively studied by the Rockefeller Foundation and a vaccine has been prepared from this virus which in controlled series appears to have some effect in preventing the disease among those inoculated. This effect is not very striking. More recently two other types of viruses have been isolated and called virus B and virus C. Only about fifty per cent of the clinical cases appear to be due to these viruses as shown by the isolation of viruses and by the complement fixation tests. There is, therefore, a considerable group of clinical influenza from which, thus far, no virus has been isolated and therefore it is not practical at this time to utilize any form of immunization in the military service against this disease.

#### THE VITAMINS

During the past few years our attention has been called more and more to the question of the early recognition and treatment of nutritional deficiencies. In 1939 the American Medical Association, feeling that this question was being very much overemphasized and that unfounded claims were being made by some manufacturers, thus influencing a large and credulous public and a few gullible doctors in the wholesale use of preparations, some of which had no merit whatever, printed an article setting forth what the Association considered the allowable claims for, the symptoms of the deficiency of, the effectiveness of the available vitamin products in the treatment of, and the results of treatment with the various recognized vitamin factors. The data so made available by the Association were conservative and even so suggested that there was a very definite place for the use of vitamins in present-day medicine, the proviso being, of course, that an actual deficiency existed and that the product used in treatment was of such a nature as to be effective. Briefly, we cannot expect some vitamin to be the indicated form of treatment in all the cases of defective vision, especially that occurring at night, dryness of the skin, poor appetite, and other of the many minor ailments for which such products were being prescribed. As practical persons, I think we should realize that a diet sufficient in amount and in variety and reasonably well balanced as to its components of protein, carbohydrate and fat, will not leave a great deal to be desired in the way of vitamins if the individual partaking of that diet eats it in all of its variety and has no disease which will prevent its proper absorption and utilization.

We have seen in literature, or perhaps I should say newspaper articles, that certain superhuman feats in the way of physical accomplishments and

ability to do without rest had been brought about by the administration of some particular vitamin. It is undoubtedly true that the present refinements of certain foods brought about by our methods of preparing the original product may have led to a decreased quantity of some of the vitamins such as B<sub>1</sub> in white bread. It is understood that to change the process of milling in the preparation of flour so as to utilize more of the whole grain of the wheat and thus avoid the loss of certain essential elements would require a very considerable expenditure of money and of time. It is not so simple it seems as when we prohibited the use of polished rice to do away with beriberi. It has been said that Vitamin A tends to increase the resistance of the body to general infections, but investigation of this question would indicate that this is true only where there has previously been an exhaustion of the body reserves of this vitamin; it has not been shown that ingestion of Vitamin A in excess of that necessary for normal body function, and so readily obtained from a proper diet, is of any benefit in preventing various types of infection. We know that thiamin will prevent or correct beriberi and it may be of value in preventing anorexia of dietary origin in certain cases. Anorexia may arise from various other causes, however, and there is no proof that thiamin is of benefit under these circumstances.

Nicotinic acid is most effective in the treatment of acute pellagra, but it does not appear that its use is warranted for prophylactic purposes or needed to supplement the ordinary diet. Ascorbic acid is specific in scurvy and naturally the earlier this condition can be recognized and treated the better for the individual, but it is not necessarily indicated in every case of oral disease such as pyorrhea or alveolar resorption. It is an essential element of the diet and its requirements are very well covered in the ordinary garrison ration without the need for special forms of administration in the normal individual.

Vitamin D is specific in the treatment of those diseases of the bone manifested by abnormal calcium and phosphorus metabolism. In the outdoor individual exposed to the sun the action of the vitamin is enhanced. The vitamin also is probably an important factor in the maintenance of normal tooth structure but it is not established that the use of Vitamin D will prevent dental caries.

Much thought has been devoted to the subject of vitamins by that committee of the National Research Council, and the subject of changing the soldier's ration, if this seemed indicated, to better vitamin requirements has received serious consideration. It has not been felt that the value of vitamins as a prophylactic against fatigue has been



established. The desirability of restoring flour to 85 per cent of the vitamin value of wholewheat seems fairly well established. In passing it may be suggested that after extensive trial the British have discontinued the use of Vitamin A to prevent night blindness in aviators, and they make no use of Vitamin B except as it occurs normally in the food.

Briefly, it may be stated that the quantities and kinds of vitamins to prescribe are complicated by our lack of knowledge of the normal requirements of vitamins, the actual relationship of one vitamin to another and the requirements for therapeutic response. It has been held by certain writers that massive doses, considerably beyond what is normally required, are justified and safe, but we do not know the low safe levels and possible effects of intakes beyond this. In the treatment of definite nutritional deficiency the use of fairly large doses by which the symptoms are alleviated and normal levels established is rational, but how beneficial continuance of such high intake would be we do not know. The detection of incipient vitamin deficiencies is too complicated at present for general use, that is, outside a hospital where complete laboratory facilities are available. In the meantime we may rest assured that the American soldier's diet is plentifully supplied with the known dietary factors and that, under normal conditions, there is little reason to believe that very extensive further additions would be of value. The Surgeon General of the Army, however, is receptive as to the possibilities of improved nutrition and the subject is receiving continuous and intelligent study by food specialists.

Under certain field conditions where it will not be possible to furnish the soldier his usual ration, it is quite possible that for variable periods, probably never more than from a few days to a fortnight, the diet will be not only unbalanced but inadequate in calories. Such a factor will necessarily obtain at times under certain military situations. However, it is logical to assume that such short periods will not materially or permanently affect the health of the individual. Long continued under-nourishment such as might result from prison life in any of its various forms is another matter entirely.

#### ANTISEPTIC DYES

The local use of antiseptics is based upon the hypothesis that infecting organisms can be destroyed without deleterious action upon the implicated body tissues. The treatment therefore is a purely local one although this method may be used in conjunction with general treatment, such as the oral or intravenous administration of drugs which

may at least prevent the spread of the infection beyond its local site.

A great deal of work and study has been devoted by scientists seeking for the production of antiseptics which might meet the requirements. There are many factors to be considered in this connection, embracing not only the type of the organism involved but the depth to which it has penetrated the tissues; the effect upon the antiseptic of the secretions of the wound area or of blood, as well as the length of time during which the antiseptic acts, therefore the frequency of its application, the type of dressing necessary incident to its use and the manner of its application, that is, what apparatus may be required.

The use of local antiseptics began originally as a result of the work of Lister and his associates. It was not at first appreciated perhaps that the greatest antiseptic is life and that living tissues have a certain degree of resistance which, if guarded and conserved, affords the best guarantee for localization of an infection; therefore, chemicals used for antiseptic reasons should not be destructive to the vitality of the normal tissues, else they damage the defensive agents as well as the infective ones. Also the general resistance of the individual patient is as important as that of the wound; injured parts must be rested and shock, cold, fatigue and blood loss must be combated. At times these facts have been forgotten and in the attempt to overcome a local infection which was not yielding to the methods of treatment employed, stronger and stronger antiseptics have been used only, of course, to defeat the purpose of the treatment. More recently a form of treatment in such cases has consisted in immobilizing in plaster of paris, infrequent dressing and free drainage.

The action of an antiseptic depends on three features, its concentration, time and temperature. Two other important factors are its behavior in the presence of organic matter and its action on the tissues of the body. The most rapidly acting antiseptics are the halogens and those liberating nascent oxygen. The halogens act quickly, the compounds of heavy metals and the dyes act slowly. Generally, an increase in temperature accelerates these actions but this varies in degree with the antiseptic used. Ogilvie in his War Primer published in 1940 divides chemical antiseptics into nine principal classes of which three, acids, soaps and essential oils, are unsuitable for wound treatment. The six suitable agents he lists as oxydizing antiseptics, the halogens, the heavy metals, alcohols, coal tar derivatives (including di- and tri-phenylmethylenes) dyes and the acridine dyes) and sulfanilamide compounds. After an exten-

sive discussion of these various products he concludes that the acridine group or "flavines" are the most suitable and effective, although he states that the sulfanilamide compounds are promising and that further experience may establish a high value for them. He finds that the flavines disinfect in a short period of time and act in a very weak solution, that they are more effective against the *Streptococcus pyogenes* and *aureus* or *Bacterium coli* but have no action whatever on *pyocyaneus*, that their bacterial activity persists in the presence of either serum or blood and that they are the least toxic of all effective antiseptics. He recommends proflavine as the choice of this group. As to the form of local application he states that the proper vehicle for antiseptics is water and that the solution, if possible, should be isotonic.

As to the logic involved in the use of local antiseptics Ogilvie feels that their early use may have considerable effect in preventing an infection which they would not be able to combat successfully after the infection was established. It has been found that proliferation of bacteria and invasion of the tissues do not occur for two hours or more after injury and it is during this period that the preliminary use of an antiseptic should be begun. Even reducing the bacterial content of a fresh wound can be of service and exposure to even sublethal concentrations of certain antiseptics for only a few minutes will greatly reduce bacterial virulence. He states that the acridine compounds have been shown to prevent infection in experimental wounds in animals, which wounds had been inoculated with virulent bacteria. Ideally, the solution should remain in the wound cavity for an hour or more and solutions can be injected interstitially without ill effect. Such use of antiseptics, of course, is not expected to take the place of plainly indicated surgical measures. Also, it is unwarranted to expect any effect on a spreading cellulitis, suppuration spreading along fascial planes or on gas gangrene. Here systemic chemotherapy with sulfanilamide compounds is required. Whenever antiseptic treatment is adopted it should be strictly limited in duration; if the destruction of bacteria is not achieved within a day or two there is no reason why it ever should be and long continued application is contraindicated because of damage to reparative tissues.

It would seem then that certain local antiseptics of the acridine group have had a valuable part in the treatment of war wounds and that this may still be true of properly selected cases. However, it is undoubtedly much more simple to use some of the sulfanilamide group and this seems to have become the method of choice; whether or not such

a choice has been partially due to the ease of the application is a question.

#### BLOOD PLASMA

Blood serum as a substitute for whole blood was suggested in 1918 when Mann, working on experimental shock in dogs suggested that blood serum was effective in restoring lost blood volume and might be of value clinically when whole blood could not be obtained. In 1936 Elliott suggested the use of untyped serum and plasma and developed the vacuum bottle for bleeding and separating the plasma from the red blood cells. He also pointed out that in traumatic shock the important factor in treatment is the replacement of the lost fluid in order to restore the colloidal pressure and that the need for the red blood cells is almost negligible. He suggested also that plasma might be stored for long periods without deterioration. It is now well established that plasma and serum are valuable in the treatment of shock, burns and hemorrhage and other conditions in which there is an alteration in electrolyte balance.

Plasma and serum differ in composition and methods of processing. Plasma is the supernatant fluid collected from blood when an anticoagulant is added. Serum is the liquid portion of blood which separates when blood clots. Plasma contains fibrinogen, serum does not. Reactions have been reported following the use of serum but are practically nil following the use of plasma.

Plasma is an excellent substitution for whole blood and can be used without typing either the donor or the recipient. It can be stored safely both in the liquid and dry states, the former for approximately a year with merthiolate 1:10,000 added, and the latter for five years if it is sealed under glass. It can be transported with impunity, is ready for instant use and does not increase the concentration of red blood cells when injected in cases of shock and burns where hemoconcentration is already present. Through the efforts of various workers the desiccation of plasma is now practicable. When plasma is dried properly its constituents are practically unaltered. It is very essential that plasma be processed rapidly to the drying state. Dried plasma is quickly restored to the liquid state by the addition of pyrogen-free distilled water. It can be administered in normal concentration or four times concentrated. It does not have to be warmed up prior to injection. It is usually given at the rate of ten cubic centimeters per minute but this can be increased if there is no cardiac contraindication.

We have here an agent of great military surgical importance. That plasma should be used for replacing the diminished blood volume in cer-



tain conditions is obvious and that it can be made available in large quantities is highly probable. It can be stored for an indefinite period either in the frozen state or dried form, can be transported, easily reactivated and made available for air-raid casualties, highway injuries, or casualties in the forward areas of the combat zone with complete ease. Its administration requires but a few minutes to carry out and provides us with what often may be a life-saving measure.

At the Army Medical School blood from 100 volunteers furnished by the American Red Cross was collected and liquid plasma produced. This preparation is available for clinical use at Walter Reed General Hospital. Preparations are being made for installing a drying unit so that plasma may be dried, stored and used at the Army Medical Center. The American Red Cross and the National Research Council, working jointly, have arranged with Sharpe and Dohme Company to dry large quantities of plasma for use by the armed forces. The blood for this purpose is being collected from volunteer donors and originally was collected at bleeding centers fairly close to Philadelphia. The program is expected to spread later over the entire country.

#### YELLOW FEVER VACCINE

Yellow fever has played a spectacular rôle in the military history of the western hemisphere, as has been pointed out by Simmons. It has on occasion threatened the United States Army and in view of certain possible eventualities it is fortunate that an effective vaccine is available for use in troops since the disease is endemic in certain tropical areas. This vaccine has been manufactured by the Rockefeller International Health Board since 1936. It consists of an activated living strain of yellow fever virus, maintained by cultivation in the living chick embryo. It is administered in a single subcutaneous dose of one cubic centimeter and can be used advantageously under epidemic conditions. The vaccine has been administered to almost 2,000,000 persons in Brazil since 1938. The army has arranged for a supply of yellow fever vaccine adequate for the protection of such troops as may require it.

#### THE BARBITURATES

The well-known powerful sedative action of various members of the barbiturate group would indicate the possibility of its being advantageously used in many selected cases during combat. In wounds or injuries where narcotics are not indicated or not available, a sufficient dose of some of the more quickly acting members of this group to produce threshold anesthesia might well be of

value. The selection of cases would of course avoid those who had had or might later be given any of the sulfanilamide group. In certain types of individuals among whom nervous or neurotic manifestations might occur and for which transportation of the patient to some point in the rear was necessary, there might be a direct indication for the use of the drug. Fortunately the pendulum has swung so that the barbiturates do not now occupy the position in the medical mind that they did a year or two ago when they had replaced the former cure-all, aspirin; now in turn they are threatened with displacement by the sulfonamides. There is a real place, however, for their use in selected cases.

It would appear that hypersusceptibility is present in some individuals and it is to be remembered that a certain number of patients become addicted to barbiturates. The fatality rate to acute barbiturate poisoning is about seven per cent. The question of the use of barbiturates to prevent or delay the onset of shock on the field of battle is one concerning which there is little information. Inquiry has not developed as to whether or not the British army has used the drug for such purpose, and the relation of any of this group to the development of shock has not at the present time been definitely established. Certain experimental work suggests that the barbiturates have some value in combating a tendency to hemoconcentration, that shock develops sooner under ether anesthesia than under barbiturate anesthesia and Betlach mentions that the delayed onset of shock under barbiturate anesthesia "brings up the insistent possibility of the intravenous use of barbiturates to alleviate pain and to prevent the onset of exhaustion in the transportation of wounded soldiers during war time". In any case the use of the drug in excited cases where there is no definite indication for other medication would seem logical and practicable.

Thus it will be seen that of the eight important recent therapeutically potent preparations mentioned earlier, six, the sulfonamide group, tetanus toxoid, the flavine dyes, blood plasma, yellow fever vaccine and the barbiturate group have great promise for the military doctor in selected cases. Of the remaining two, influenza vaccine and the vitamins, the former is not sufficiently developed to arouse any enthusiasm, although a reliable and effective preparation of this nature would probably rate first in importance in the medical armamentarium; the vitamin group, while holding a tremendous popular interest, has the least practical value in the present state of our knowledge.

At any rate, we have today the greatest group of remedies we have ever had for such military

needs as we now know of or can visualize; let us hope that we will be able quickly to find suitable and efficient remedies for any new conditions which may arise to confuse us.

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## AN OUTBREAK OF ROCKY MOUNTAIN SPOTTED FEVER

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Rocky Mountain spotted fever has occurred from year to year in Iowa, since report of the first case in June 1933, by C. N. Freligh, M.D., of Waucoma in Fayette County. During the eight-year period from 1933 to 1940, reported cases in this state totaled 85, with 14 deaths, a case fatality of 16.5 per cent.

The accompanying map (Fig. 1) shows the distribution by counties of the nineteen cases reported in Iowa in 1940. The usually sporadic occurrence of cases is indicated by the fact that thirteen of the nineteen cases were reported from twelve different counties. The remaining six cases occurred in adjacent counties (Des Moines and Lee) in southeastern Iowa. The following account centers about this group of six cases (note area contained within the circle in Fig. 1), because of their exposure to a common source of infection in the same locality.

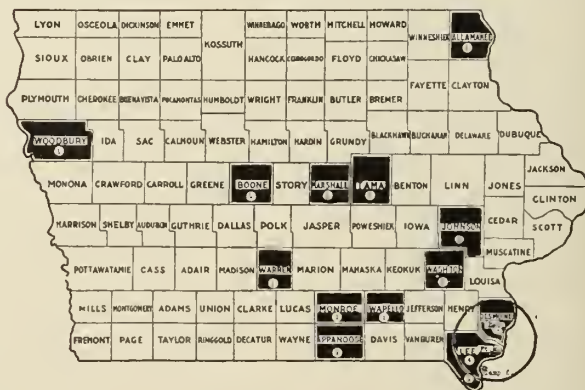
#### SYMPTOMS AND FINDINGS

A brief description of three of the six cases which comprised the outbreak will serve to present symptoms and findings which characterize Rocky Mountain spotted fever.

Case 1. J. F., a boy thirteen years of age, living in Fort Madison, Lee County, Iowa, became ill July 20, 1940, with fever which lasted about

two weeks, and a moderate degree of prostration. On the third day small, reddish macules were seen on the legs and arms and then on the body. At no time did the patient feel very sick. Recovery occurred at the end of three weeks, with no complications. The patient had been tick-bitten numerous times during the days immediately preceding illness. On August 17, 1940, the patient's blood serum showed a positive reaction to the Weil-Felix test, the State Hygienic Laboratory reporting complete agglutination in a dilution of 1:320.

Case 2. A. J., a girl, seven years of age, with residence in the same city and county as J. F., had onset of illness July 21, 1940. The patient complained of headache, showed fever and pros-



tration. On the third day a red macular rash was observed, with anatomic distribution over the entire body. The macules later became hemorrhagic and then of a bluish color. The patient was very ill, being irrational and semicomatose for nearly a week. She developed a moderate degree of edema; temperature ranged from 103 to 105 degrees for about ten days. The patient remained in the hospital until the twenty-first day of illness, and later made a satisfactory and complete recovery. The mother stated that a partially engorged tick had been removed from the patient's left leg about nine days before the first symptoms. The Weil-Felix reaction on the patient's serum, examined August 14, 1940, proved positive in the 1:640 dilution.

Case 3. R. W., a male, fourteen years of age, of Burlington in Des Moines County, Iowa, developed chilliness, fever, violent headache, nausea, and general discomfort, on July 29, 1940. The patient complained of pain and tenderness in wrists, knees and ankles. A rash appeared July 31 on forearms, ankles, abdomen and elsewhere on the body. The macules, minute to pea-sized, were rose-colored, later changing to red, purple and brown. The spots were more prominent



with elevation of temperature. Two weeks after its first appearance, although the rash had faded, a few macules were still visible on the abdomen. The patient had slight fever on the nineteenth day of illness; recovery occurred without complication. A partially engorged tick was removed from the patient's scalp about five days before illness. The Weil-Felix test on a serum specimen was performed in the State Hygienic Laboratory and found positive August 12, 1940, in dilutions through 1:320.

#### LABORATORY REPORTS

The Weil-Felix tests were carried out under the supervision of I. H. Borts, M.D., Associate Director of the State Hygienic Laboratory. The antigens used routinely for determination of agglutination reactions are made from the following three strains of *Bacillus proteus*: *B. proteus* OX<sub>19</sub> Parker, *B. proteus* OX<sub>19</sub> N.I.H. (National Institute of Health) and *B. proteus* OX<sub>2</sub> Parker. The agglutination findings as reported on the group of six patients who participated in the outbreak, appear in Table I.

TABLE I  
Results of Weil-Felix Tests

No.	Patient	Weil-Felix Test	
		Date	Reaction
1.	D. G.	8- 3-40	1:640
2.	J. T.	8-17-40	1:320
3.	A. J.	8-14-40	1:640
4.	R. G.	8-13-40	1:640
5.	R. F.	8- 8-40	*1:40
6.	R. W.	8-12-40	1:320

\*In spite of the low titer (1:40), the reaction is regarded as significant, because first, a previous serum specimen was reported negative, and second, clinical manifestations were those of Rocky Mountain spotted fever.

#### DIAGNOSIS

The diagnosis of Rocky Mountain spotted fever is based on the clinical picture (including the macular, later petechial, rash which is characteristic, striking and seldom absent); on the history of direct exposure to the wood tick or common dog tick, *Dermacentor variabilis*; and on a positive Weil-Felix reaction. Agglutinins are usually present in the blood serum toward the end of the second week. A negative Weil-Felix or agglutination test, followed by a positive report

on a second specimen taken several days after the first, is highly significant. A positive Weil-Felix test occasionally occurs in conditions unrelated to Rocky Mountain spotted fever or typhus fever; the test is in such instances apparently nonspecific.

#### EPIDEMIOLOGY

With one exception, the patients were boys twelve, thirteen or fourteen years of age. (See Table II.) All of the boys, during the days immediately preceding onset of symptoms, had spent a week at Camp E, a boy scout camp about five miles south of Nauvoo in Illinois, overlooking the Mississippi river. The camp is in a hilly, heavily wooded area. Ticks were numerous, affording the opportunity for repeated exposure. Two of the patients, R. G. and R. W. (see Table II), played together daily while away from home; the latter removed some ticks from a dog at the camp. A. J., the girl of seven who was seriously ill, had not been out of town during the week before infection. Strangely enough, but perhaps significantly, her father who is a band director, had been at Camp E with the car. The little girl rode uptown in the family car and after returning home, was found to have a tick on the left leg; this occurred about nine days before illness. Information pertaining to the age and sex, county of residence, time of exposure and date of onset of illness of six patients included in the spotted fever epidemic, is contained in Table II.

Collection of ticks with the purpose of demonstrating presence of the virus of Rocky Mountain spotted fever was not made at the camp area. Sporadic cases of spotted fever have been reported from Lee County in recent years. In connection with a tick survey conducted in Iowa in 1937, R. R. Parker, Ph.D., Director of Rocky Mountain Laboratory of the United States Public Health Service, Hamilton, Montana, reported isolation of the virus, *Dermacentor variabilis*, in ticks collected in Clarke and Tama Counties.

Notification of the occurrence of multiple cases of Rocky Mountain spotted fever and of the probable source of infection in the camp area,

TABLE II  
Epidemiologic Data Related to Spotted Fever Epidemic

No.	Initials	Age	Sex	City	County	Dates of Exposure at Camp	Date of Onset
1.	D. G.	12	M	Fort Madison	Lee	7- 3 to 7-10	7-14-40
2.	J. T.	13	M	Fort Madison	Lee	7-10 to 7-17	7-20-40
3.	A. J.	7	F	Fort Madison	Lee	Rode in car 7-12	7-21-40
4.	R. G.	12	M	West Burlington	Des Moines	7-17 to 7-24	7-25-40
5.	R. F.	12	M	Fort Madison	Lee	7-17 to 7-24	7-26-40
6.	R. W.	14	M	Burlington	Des Moines	7-17 to 7-24	7-29-40

was made to the Illinois State Department of Health.

#### SUMMARY AND CONCLUSIONS

1. Report is made of an outbreak of Rocky Mountain spotted fever, with the common source of infection at a boy scout camp.

2. Persons who are subject to exposure should be tick conscious during tick season; inspection of the body is advised morning, noon and night, to insure freedom from tick bite.

3. Grass and vegetation should be kept short around cabins and buildings close to wooded areas.

4. Care should be exercised to keep dogs free from tick infestation.

5. Control measures need development, designed to interrupt the life cycle of the wood tick (common dog tick).

6. For those subject to repeated exposure, spotted fever vaccine made according to the method of Cox, affords prospect of seasonal immunity against the danger of Rocky Mountain spotted fever.

Acknowledgments: Grateful acknowledgment is made to the following attending physicians who completed case reports and made available much of the information contained in this report: H. G. Cleary, M.D., Ft. Madison; B. J. Dierker, M.D., Ft. Madison; F. H. Aid, M.D., Burlington; R. T. Feightner, M.D., Ft. Madison; and B. L. Ditto, M.D., Burlington.

#### SEASONAL NOTES ON THE DOG TICK

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The present studies on the dog tick, *Dermacentor variabilis* (Say) are being conducted on the Tama Indian Reservation near Toledo, Iowa, and were started on April 16, 1941. The work is being conducted jointly by the State Department of Health and the Department of Zoology and Entomology of Iowa State College and will be continued throughout the summer. The chief purpose of the work is to obtain information regarding animal hosts of tick larvae and tick nymphs. A sufficient number of Rocky Mountain spotted fever cases have been reported in Iowa to warrant a detailed study of the common dog tick which so often is considered the causative agent in this disease.

In addition to the observations on the dog tick, it is interesting to record the finding of speci-

mens of *Amblyomma americanum* on horse and dog; *Ixodes sculptus* on the thirteen-striped ground squirrel; and *Ixodes texanus* on dog; and *Haemaphysalis leporis-palustris* on rabbit, brown thrush, blue jay, bob-white or quail at Tama, Iowa. *Ixodes texanus*, a southern species, does not seem to have been reported heretofore from Iowa. The following observations were made on *Dermacentor variabilis* at Tama, Iowa.

Adults: Several attempts were made during the forepart of April at Ames, Iowa, to collect adult ticks by means of the "drag" or "flag" method. None was collected by this method, but one male was taken on April 8, and one female and one male on April 12, from debris on the ground. On April 16, at the Indian Reservation at Tama, an almost fully engorged female and several males were taken from one dog. This and other records indicate that the adults of *Dermacentor variabilis* were active in the vicinity of Tama during the first week in April, but only to a very limited extent. Their numbers have greatly increased since the field work was started as naturally would be expected. In one instance, a dog belonging to one of the Indian families picked up a total of 217 ticks during a four-day period, May 1 to May 5. In addition, adults have also been collected this spring from the horse, house cat, raccoon, pig, fox squirrel and ground hog.

Nymphs: In comparison with the number of larvae, only a few nymphs have been taken so far this spring. The first specimens were found on April 16 and a few individuals have been taken since then. A total of 28 nymphs have been collected to May 15. Nymphs appear to be increasing in numbers, but so far they have been removed only from the northern white-footed mouse and Mearn's cottontail. Nineteen different species of animals have been carefully examined at Tama for ticks from April 16 to May 16, representing a total of 234 individual animals which have been "deticked" this spring.

Larvae: A total of 1,832 individuals have been collected. Of these, 1,524 were taken from the northern white-footed mouse, and 308 from the cottontail rabbit. Only eighteen cottontails were examined in comparison with 82 mice. Larvae were not found on the other species of animals examined.

Field evidence seems to indicate that Mearn's cottontail rabbit and the northern white-footed mouse may play important rôles as hosts for the immature forms of *Dermacentor variabilis*. The cottontail rabbit is being observed with considerable interest, because the findings are not entirely in accord with published reports in the literature.



## NOTES ON THE DISTRIBUTION AND BREEDING HABITATS OF IOWA ANOPHELES

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Because of the increasing importance of malaria in this state, a survey of the mosquitoes of Iowa was started in 1936 and continued through the summers of 1939 and 1940. During this period, about 600 collections of adult and larval mosquitoes have been made from ninety-six counties of the state.

The collections of *Anopheles* breeding show that Iowa is within the geographic range of four species of this genus: *Anopheles punctipennis* (Say), *Anopheles quadrimaculatus* (Say), *Anopheles walkeri* (Theobald) and *Anopheles maculipennis* (Meigen).

Although all of the above mentioned species are susceptible to infection with malarial parasites under certain experimental conditions, only two, *A. quadrimaculatus* and *A. maculipennis*, are regarded as important vectors in the United States. *A. quadrimaculatus* is the vector in the southeast and south-central states and *A. maculipennis* in the Pacific Coast states. This report covers the known distribution and ecologic data of the four species of anopheline mosquitoes taken in Iowa.

### *Anopheles punctipennis* (Say)

This species is the most widely distributed and most common anopheline in the state. Fig. 1 indicates the localities from which one or more collections of this species were taken and includes records from 68 counties. An explanation for its wide distribution and common occurrence is readily found in its breeding habits. It breeds under a wide range of conditions.

Many types of watered areas situated in various surroundings serve as suitable breeding places. Of the total number of collections taken, 36 per cent were situated in open country and 62 per cent were in wooded areas. Almost all types of watered areas support the growth of larvae of this species; seven per cent of the collections were taken from lakes; 36 per cent from ponds; 15 per cent from marshes; 11 per cent from small potholes; 19 per cent from streams or ditches; 11 per cent from sheet water in low swales; and one per cent from receptacles such as old cans and barrels. Breeding was found to occur in temporary water in 24 per cent of the collections, in intermittent water in eight per cent, and in permanent water in 68 per cent. There appeared to be very little or no choice between shaded and unshaded breeding

habitats; each is represented by approximately 50 per cent of the total collections.

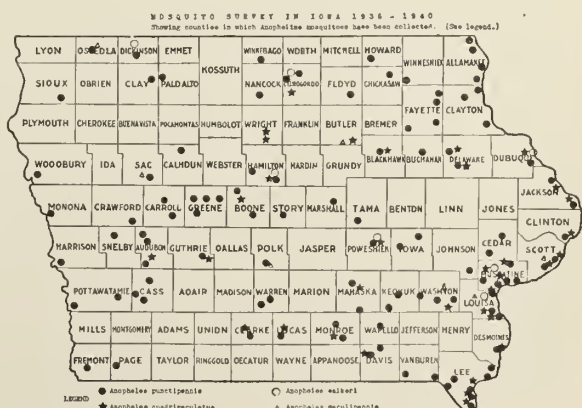
Because of the surface feeding habits of the larvae, waters having considerable amounts of floatage to protect them from natural enemies, were most suitable for the breeding of anopheles. Collections of *A. punctipennis* showed that 67 per cent were from water having living floating plants, 30 per cent from water with floating debris, and 14 per cent from water containing no floatage. The latter constituted collections taken from small potholes and animal tracks. Bodies of water surrounded by aquatic vegetation were represented by 41 per cent of the collections and those surrounded by terrestrial plants by 59 per cent; thus there was little choice between marginal surroundings. It is interesting to note that 79 per cent of the collections were taken from lentic water (water covered with duckweed) and 21 per cent from water of a lentic nature with considerable floatage.

In view of the wide distribution and the varied situations in which this species was found to breed in numbers, it is fairly safe to say that more field work will show it to be present in every county in Iowa.

### *Anopheles quadrimaculatus* (Say)

The present records of this species show that it occurs in almost all sections of Iowa. However, certain parts of the state, as indicated by the map, (Fig. 1), have failed so far to yield collections of this species. Little collecting has been done in the northeastern and the southwestern counties and these areas will probably yield collections before the survey is completed. Some blanks on the distribution map can be explained by the absence of suitable breeding habitats.

Field observations show that *A. quadrimaculatus* is much more limited in its breeding habits than *A. punctipennis*. Certain factors appear to inhibit its breeding in many watered areas. From 56 larval collections in twenty-nine counties, 36



per cent were taken in open country and 64 per cent in wooded areas. These figures are similar to those given above for *A. punctipennis*. Only a few types of watered areas supported larval populations of *A. quadrimaculatus*. Seven per cent of the collections were from lakes, 68 per cent from ponds, 20 per cent from marshes and five per cent from sheet water in low swales. No collections of *A. quadrimaculatus* were taken from small potholes, streams or receptacles.

These records indicate clearly that *A. quadrimaculatus* is principally a pond breeder. This is further substantiated by the fact that 84 per cent of the collections were from areas of permanent water, 14 per cent from areas of intermittent water and only two per cent from temporarily watered areas. Like *A. punctipennis*, this species showed no choice between shaded and unshaded breeding habitats.

An important factor in the breeding of this species is the presence of floatage. No breeding was found in watered areas void of floatage; 79 per cent of the collections were taken from water which supported live floating plants and 51 per cent from water having floating debris. No collections were taken from water of a lotic nature (water that is rough or rapidly moving). There appeared to be little choice between watered areas having aquatic marginal plants and those having terrestrial marginal plants.

Some counties of the state lack suitable ecologic conditions for extensive breeding of *A. quadrimaculatus*. Since this insect prefers ponds containing floatage in which to breed, plans for the impounding of water should include provision to assure the minimum amount of breeding of *A. quadrimaculatus*.

#### *Anopheles walkeri* (Theobald)

This species was found in only nine collections from eight counties. The range within the state, however, is extensive as indicated on the map. Although *A. walkeri* occurs in considerable numbers in some localities, it is undoubtedly much less common than the two previously mentioned species.

*A. walkeri* was represented in an insufficient number of collections to warrant generalizations on its breeding habitats. Five collections were from marshes, two from ponds and two from lakes, all being from watered areas of a permanent nature and showing an abundance of marginal aquatic vegetation. No collections were taken from water void of floatage: seven came from water supporting living plant floatage and eight from water that showed considerable floating debris. Field observations indicate that

watered areas supporting dense growths of marginal aquatic plants and which contain considerable floatage are attractive to this species.

It is interesting to note that the larvae of the Iowa collections definitely display the characters which have been described for the southern race of this species which occurs in Florida.

#### *Anopheles maculipennis* (Meigen)

This species is represented by seven collections from seven different counties. It ranges in Iowa from the Mississippi River west to Polk, Sac and Osceola Counties. Like *A. walkeri*, it is an uncommon species. The few habitat records indicate that its preferences are somewhat like those of *A. punctipennis*. Four collections were from ponds, two from marshes and one from small potholes bordering a stream. All collections were from lentic watered areas of a permanent nature, having either living floatage or debris. Collections were equally divided in number between areas having an abundance of aquatic marginal vegetation and areas with terrestrial marginal plants.

#### SUMMARY

1. Four species of anopheles occur in Iowa; *A. punctipennis* (Say), *A. quadrimaculatus* (Say), *A. walkeri* (Theobald), and *A. maculipennis* (Meigen); all are widely distributed in the state.

2. *Anopheles punctipennis* (Say) is the most common species and breeds in a wide variety of habitats. *Anopheles quadrimaculatus* (Say) is essentially a pond breeding species and its presence is closely associated with floatage. *Anopheles walkeri* (Theobald) appears to prefer marshy habitats.

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#### SPEAKERS BUREAU RADIO SCHEDULE

WSUI—Tuesdays at 2:30 p. m.

WOI—Wednesdays at 2:05 p. m.

- |            |  |
|------------|--|
| July 1- 2  | Summer Round-Up, Lee F. Hill, M.D.                       |
| July 8- 9  | Group Hospitalization, Mr. F. P. G. Lattner              |
| July 15-16 | Physiology of Blood Circulation, Charles A. Nicoll, M.D. |
| July 22-23 | Eye Strain, Rollin W. Wood, M.D.                         |
| July 29-30 | Plastic Surgery, Leo H. LaDage, M.D.                     |



## A MALARIA OUTBREAK IN DUBUQUE, IOWA

ALBERT J. ENTRINGER, M.D., Dubuque

From June 23, 1939, to September 14, 1940, forty-eight cases of malaria were reported to the Health Department of Dubuque, Iowa. This is surprising in view of the fact that malaria has been encountered infrequently in this part of the United States.

With few exceptions, diagnosis in the series of reported cases was based on the finding of the malarial plasmodium in blood smears. Malaria in all cases was of the tertian type, caused by *Plasmodium vivax*.

The age and sex distribution of reported cases is shown in Table I. Table II shows the distribution of forty-two cases in 1939 and 1940, according to month of onset of symptoms.

TABLE I  
SHOWING AGE AND SEX OF 47 CASES REPORTED  
IN 1939-1940

Age	MALE		FEMALE		TOTALS	
	1939	1940	1939	1940	1939	1940
1-9	1		1		2	
		1		1		2
10-19	3		1		4	
		2		4		6
20-29	6		0		6	
		1		2		3
30-39	2		2		4	
		0		3		3
40-49	1		6		7	
		0		1		1
50-59	3		2		5	
		2		0		2
60 and over	0		1		1	
		0		1		1
	16	6	13	12	29	18

Dubuque is a city of approximately 45,000 inhabitants. With the exception of the business district and some residences, the city is built on hills along the west bank of the Mississippi River. Part of the residential district and the entire industrial district are built on a flat area extending from the river to the hills. It is interesting to note that only four of the people who had malaria live in the hill districts; the remainder live in the flat area, in all probability close to sources of mosquito breeding. Along the river are numerous sloughs or ponds, that for the past few years have been allowed to contain water during the latter part of the summer. This situation was brought about by

TABLE II  
SHOWING MONTH OF ONSET OF 42 REPORTED CASES OF  
MALARIA

Month	1939	1940
March	..	1
June	3	9
July	3	1
August	6	..
September	15	..
October	4	..
Totals	31	11

the building of a series of dams on the Mississippi River to maintain a nine-foot channel.

Analysis of the case reports shows that with one exception, all patients lived in the city or a distance not exceeding five miles from the city during the weeks preceding onset of illness. Only one patient was certain of having acquired the disease while away from the city. This patient, an engineer on a railroad that runs along the Mississippi River, believed that exposure to infection occurred away from Dubuque.

Many of the patients gave the history of having done a great deal of fishing in the sloughs, while others did not leave their immediate district. Some stated that mosquitoes were numerous in their homes; others did not know how the disease might have been acquired. The data indicate clearly that the disease was contracted in or near Dubuque.

Report of the unusual occurrence of malaria in Dubuque was made before the Interstate Malaria Conference, held in Dubuque during May, 1940. The Conference included state health commissioners and other representatives from Minnesota, Wisconsin, Illinois, Missouri and Iowa.

### CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

#### GASTROSCOPY

W. D. PAUL, M.D., Iowa City

From the Department of Internal Medicine  
State University of Iowa

Gastroscopy as a routine diagnostic procedure has become technically easy since the introduction of the Schindler flexible gastroscope.<sup>1</sup> This instrument can be passed into the stomach with little discomfort. The examination usually takes about five to ten minutes, and, because only a small amount of local anesthetic is used, the method can be performed on out-patients.

The use of the rigid gastroscope led to many serious accidents. To ascertain whether the flexible instrument was safer than the rigid one, Schindler sent out a questionnaire to all gastro-

scopists.<sup>2</sup> He received answers from sixty physicians who reported a total of 22,351 gastroscopies. Only one fatality occurred in this large series. This patient, a woman fifty-six years of age, had a left-sided hydrothorax which was believed to be the result of bronchiogenic carcinoma. A bronchoscopic examination was done, following which her temperature rose to 39 degrees, centigrade. Five days later a thoracoscopic examination was performed, two days later an artificial pneumothorax was attempted, two days later a sternal puncture was done, and finally, gastroscopic examination was carried out. Shortly after the last instrumentation, subcutaneous emphysema was noted. At necropsy, a mediastinal abscess, a small perforation of the esophagus at the level of the seventh cervical vertebra, and carcinomatosis of the left lung were found. Whether this death was the result of the instrumentation or of the disease process itself is a moot question.

In addition to this death, nine other complications were reported; eight of them consisted of perforations of the gastric wall, and one was a perforation of the jejunum. Six of these patients were operated upon and made uneventful recoveries; three recovered without surgical intervention.

In the average case, all but a few small areas of the stomach can be visualized. To evaluate the pathologic changes which may occur it is necessary for the physician to be familiar with the normal stomach. After the gastroscope is passed to its full depth, the pylorus can be seen. At this position it is possible to see not only the pylorus, but also the antrum and the angulus; the angulus is that part of the stomach where the lesser curvature suddenly turns cephalad. If the angulus is not seen the gastroscopic examination should be considered unsatisfactory.<sup>3</sup> The pylorus opens and closes rhythmically every fifteen to twenty seconds. This rhythm is very definite and does not change in any given case. At times the pylorus, just as it closes, seems to evert toward the stomach and express a small amount of duodenal content into the antrum. The angulus is always smooth and rounded, with no folds. The antrum appears darker and slightly brownish, and only occasionally can a few folds be seen. At times as a peristaltic wave passes down the stomach toward the antrum, a rope-like structure comes into view, closing off the antrum from the body of the stomach. This fold of mucosa is called the musculus sphincter antri. The mucosa of the lesser curvature is smooth, whereas that of the anterior and posterior walls is thrown into folds. The folds on the anterior wall are small and far apart, whereas those on the posterior wall are larger and

closer together. Beginning high in the stomach, the folds run longitudinally and converge toward the antrum, where they disappear. The greater curvature is usually recognized as the point where the small, widely separated folds of the anterior wall meet the large folds of the posterior wall. Peristaltic waves can often be seen traveling toward the antrum. The walls of the stomach are pliable, and can be pushed away from the gastroscope by the introduction of a little air. The mucosa of the normal stomach is of an orange-red color, and usually moist. Blood vessels are not seen in the normal stomach.

The most common disease of the gastric mucosa is chronic gastritis. The relationship between chronic gastritis and more serious gastric lesions, such as ulcer and carcinoma, has been discussed for years. Schindler<sup>4</sup> believes that chronic atrophic gastritis is precancerous soil, and Robertson<sup>5</sup> states that chronic gastric ulcer may develop from capillary hemorrhage which results in necrosis and ulceration. Chronic gastritis has been classified into three major groups; namely, superficial gastritis, atrophic gastritis and hypertrophic gastritis.<sup>6</sup>

Superficial gastritis may be widespread, but most often is localized to small areas of the gastric mucosa. Occasionally the process may be seen in the antrum, if a duodenal ulcer is present. In this type of gastritis the involved mucosa may become a deeper red which can readily be distinguished from the orange-red of the normal part. The folds may be slightly swollen and edematous, and at times may even appear granular, especially about the antrum. Thick, tenacious mucus can be seen adhering to the fold in small amounts. Small hemorrhages may be present, and a few of these may ulcerate. These small ulcerations may appear as erosions which are always superficial, never punched-out, as in chronic peptic ulcer.

Chronic atrophic gastritis is easily recognized, and it too may be widespread or merely patchy. The mucosa in the involved areas loses its normal color and becomes a grayish green. In this grayish-green mucosa small blood vessels can be seen. Very often in this type of gastritis small mucosal hemorrhages are noted, and occasionally large areas of hemorrhages are observed. The folds may be smaller than normal, but since the size of the folds can be varied with the degree of inflation, this is a poor criterion.

Chronic hypertrophic gastritis occurs usually in the body of the stomach. In this type of gastritis the normal folds are not seen because the entire mucosa is hypertrophic. The mucosa about an involved area has a velvety appearance, and may at times be a little redder than normal. If folds



are present they have a nodular appearance, and the valleys between the folds are nodular. The nodes in folds make them appear irregular and at times not unlike sausages. Often the folds are replaced by an irregular, nodular mucosa with a cobblestone effect. This cobblestoning is most typical of this type of gastritis. Often hemorrhages are seen in the mucosa, and small erosions appear about the involved folds.



Fig. 1. Benign ulcer on the posterior side of the lesser curvature. The ulcer was sharply punched out, and there was no wall about it. It was about 2.5 centimeters long, one centimeter wide and two millimeters deep. The base was smooth and dark brown because of recent bleeding. Blood could be seen between the folds. The surrounding mucosa was normal.

Gastric ulcer most frequently occurs along the lesser curvature, near the antrum. (Fig. 1.) Fortunately this is the portion of the stomach which is best visualized through the gastroscope. The appearance of an ulcer is very characteristic. It is a punched-out area in the mucosa. The base may be a glistening, yellowish white, or dark brown if the ulcer is bleeding. There is no definite wall around the ulcer, and the surrounding mucosa is entirely normal. If the ulcer is of long standing, the folds of the stomach converge toward it, and if the ulcer is quiescent there may be nothing but a small scar at the central point toward which the folds converge. As a rule there is little difficulty in differentiating between a benign ulcer and a carcinoma. The gastroscope is not only useful in the diagnosis of gastric ulcer, but affords a means of evaluating the results of medical treatment.

Carcinoma of the stomach presents a striking picture which is entirely different from that which one sees at the operating table or at the postmortem examination. (Fig. 2.) When the carcinoma is large and is covered with necrotic material, it appears as a white, opaque, irregular mass, not unlike the top of a cauliflower. The small carcinomatous ulcers are bound on one side by a piled-up wall, while the other side of the crater blends

with the adjacent mucosa. The base of the ulcer may be a grayish white, brown or black, or be covered with blood and be nodular. The edges of a benign ulcer rarely, if ever, bleed, whereas the edges of a malignant crater very frequently show some bleeding. The floor of a malignant ulceration is not punched out, as is the case with peptic ulcer, but becomes elevated near the edge and blends with the wall. The mucosa surrounding the involved area may contain some isolated carcinomatous nodules and small, deep ulcerations. The mucosa appears edematous, and there may be patches of atrophic gastritis. The stomach wall itself seems rigid which gives the impression that infiltration has taken place. As can be seen from the foregoing, malignancy of the stomach presents very characteristic formations which make the diagnosis fairly simple. It is probably in this condition that the gastroscope is most valuable for early diagnosis.

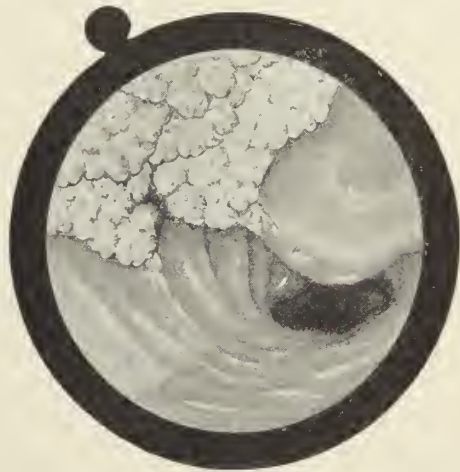


Fig. 2. Carcinoma of the lesser curvature near the pylorus. Cancer occupies the upper left hand quadrant. The dark opening represents the antrum. The carcinoma was composed of piled-up, irregular, white masses of necrotic material. This lesion was removed at operation and was five centimeters in diameter. No metastases were observed at time of operation.

Gastrosopic examination is a step forward in the diagnosis of gastric disorders. It must be remembered that it is only a supplement to our other methods of diagnosis, and if this cooperative attitude is maintained much added information can be obtained.

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## THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

### SUBLEUKEMIC LYMPHATIC LEUKEMIA WITH SECONDARY ANEMIA

WALTER CARY, M.D., Dubuque

Leukemia was first recognized about one hundred years ago but only since the beginning of the present century has it been known that the disease may be present without a notable increase in the number of leukocytes in the blood. Today the detection of qualitative as well as quantitative changes in the blood cells usually enables the physician to make a correct diagnosis. However, in some instances, this is impossible without study of blood smears over a considerable period. In such cases sternal biopsy should be performed and the smears thus obtained are usually diagnostic whether the blood picture is subleukemic or not. The following case illustrates this point because the diagnosis was in doubt until the smears of the sternal marrow were studied.

#### CASE REPORT

*Chief Complaint:* The patient, a white woman seventy-six years of age, was admitted to the Finley Hospital, April 4, 1941, because of "weakness, fatigue and cough".

*Family History:* The patient did not know the causes of her father's or mother's deaths. One brother had died in childhood and one had died of carcinoma of the colon. The first husband had died of tuberculosis. Five brothers and one sister were alive and well.

*Past History:* It was impossible to obtain a clear history because of the patient's exhaustion.

*Present Illness:* About four months before admission the patient became very weak and tired easily. This began in her feet and gradually worked up to her hips. She also developed a cough and was thought to have tuberculosis, but a Mantoux test and sputum examinations were negative for tubercle bacilli. She also had marked edema of the lower extremities but this cleared up if she remained in bed. She had been getting subcutaneous injections of some medicine because her "blood was very low".

*Physical Examination:* The patient's temperature was 100 degrees, the pulse was 94 and the respirations were 24 per minute. The patient was a well developed but poorly nourished white woman who appeared extremely ill. The skin was dry, thick and hard. The ears, nose and eyes were negative except for pallor of the conjunctiva.

The teeth were all lacking as were the tonsils. The mucous membranes of the buccal cavity were pale but clean. The thyroid gland was barely palpable and was symmetrical. No cervical lymph nodes could be felt. The breasts were small and homogeneous. The axillary nodes could not be palpated. The lungs were negative to percussion but on auscultation numerous dry râles were heard throughout each lung. The heart was not remarkable except for an increased rate. The blood pressure was 110/45. The abdomen was negative and the spleen and liver could not be palpated. The extremities were negative except for arthritic deformity of each hand.

*Laboratory Examinations:* The admission blood count showed 4,650 white cells, 1,930,000 red blood cells, and a hemoglobin of 5.5 grams. The differential count showed 8 polymorphonuclears, 89 lymphocytes, 1 basophile and 2 monocytes. Sixty per cent of the lymphocytes were lymphoblasts and the red cells while normal in size appeared as thin-walled rings. Bone marrow studies were suggested because leukemia was suspected. Several smears were obtained and showed many lymphoblasts with only rare cells of the granulocyte series. The urinalysis was essentially negative.

*Provisional Diagnosis:* Subleukemic lymphatic leukemia.

*Course in Hospital:* The patient's temperature varied between 100 and 102 degrees, the pulse fluctuated between 100 and 120 and the respirations rose from 24 to 44 in four days. Repeated blood examinations showed essentially the same picture as noted above. She was given injections of liver extract and general supportive treatment but rapidly grew weaker and died on the fourth day after admission.

*Final Clinical Diagnosis:* Subleukemic lymphatic leukemia with secondary anemia.

*Necropsy Abstract:* At the necropsy the only positive findings were arteriosclerosis of a moderate degree, several small myomas of the uterus, one of which was calcified, ascites, bilateral pleural effusions, bronchopneumonia and pulmonary edema. There was no gross evidence of leukemia in the blood, liver, spleen or lymph nodes. Microscopically the bone marrow from the sternum, ribs and vertebrae showed large numbers of lymphoblasts. A few collections of these cells were also found in sections of the lungs, liver and spleen. In the lung they were surrounded by small hemorrhages in some instances.

*Anatomic Diagnosis:* Primary: 1. Subleukemic lymphatic leukemia; secondary anemia. 2. Bronchopneumonia; acute cardiac dilatation and pulmonary edema; ascites and bilateral pleural



effusion. Subsidiary: Arteriosclerosis: chronic cystic endometritis: myomas of the uterus (one calcified).

*Comment:* Aside from the blood picture the most notable feature of this case was the absence of objective signs which might have given a clue to the diagnosis. The lack of enlargement of the lymph nodes, spleen or liver and of a hemorrhagic diathesis is unusual in lymphatic leukemia. The only positive sign was the unexplained anemia. This emphasizes the need for diligent search for an etiologic factor in every case of secondary anemia. Today bone marrow studies should be a routine procedure in all such cases and particular attention must be paid to the morphology of the white blood cells.

#### GENERAL DISCUSSION

The leukemias are divided into three main groups, myelogenous, lymphatic and monocytic. The last is almost always acute but the others may be acute or chronic. They also may have subleukemic (aleukemic) phases. The etiology is unknown and while there are proponents of an inflammatory origin, the consensus favors a neoplastic origin. Certainly it cannot be denied that each group has many of the characteristics of malignant neoplasms.

The diagnosis of leukemia is easily made in cases with greatly increased numbers of white blood cells and with a high percentage of immature cells. In those cases with a leukopenia, the diagnosis is more difficult but adequate study of the cells in the blood stream and especially of the bone marrow makes the diagnosis possible. In addition to the qualitative and quantitative changes in the white blood cells, the red blood cells may appear as hypochromic normocytes, microcytes or macrocytes. Usually the lymph nodes and spleen are definitely enlarged and at times this is also true of the liver.

There are certain other objective signs which are frequently although not always present which should make one suspect the possibility of leukemia. Among these are diffuse swelling of the mucous membranes of the mouth, particularly the gums, a tendency to bleed from the nose, or superficial ulcerations of the mouth. In some instances these lesions are accompanied by toothache. The prominent subjective symptoms are weakness and fatigability, and without proper blood studies they are often thought to be due to the accompanying anemia. Other symptoms may be failing vision, paralysis, fever, cough or pain in bones due to

erosions and periosteal elevations. These symptoms indicate the variability of the clinical picture and the need for considering aleukemic leukemia in any obscure illness in a child or adult.

The treatment in acute cases of leukemia is symptomatic and no cure is available. In chronic types x-ray therapy is beneficial and probably prolongs life somewhat. However, even in the most favorable cases death usually ensues within five years. More rarely life has been prolonged for ten or more years.

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#### CLARIFICATION OF PREMARITAL LEGISLATION

In the process of carrying out the recently enacted legislation pertaining to premarital examinations for syphilis in a communicable state, two questions have been frequently raised by physicians throughout the state. These questions are:

1. May doctors licensed in Iowa examine non-resident applicants for license to wed in the state of Iowa?

2. May Iowa residents who are temporarily living outside the state of Iowa be examined by a doctor licensed to practice in the state of the applicant's temporary residence?

In an effort to clarify the intent of the law in these two instances, the Attorney General's office has issued the following abstracted opinions: "It is our conclusion that non-residents of the state of Iowa may be examined by an Iowa physician or they may be examined by a physician licensed in the state of the applicant's residence. . . . It is our conclusion that an Iowa resident who is temporarily living outside the state may be examined and procure his health certificate as contemplated by the provisions of Senate File 2 from a physician licensed to practice in the state where he is temporarily residing".

The purpose of the legislature in enacting this bill obviously was to prevent, as nearly as possible, the marriage in this state of persons having syphilis in a communicable stage, and the above opinions are liberal interpretations of the law, aimed at carrying out the intent of the legislature.

# STATE DEPARTMENT OF HEALTH

*Walter L. Bierring*

## The Interstate Malaria Survey

On March 21, 1941, the Board of State Health Commissioners, Upper Mississippi River Basin, authorized continuation during the coming summer and autumn of 1941, of the Interstate Malaria Survey initiated a year ago. Participating states are Wisconsin, Minnesota, Illinois, Missouri and Iowa. Iowa's health commissioner, Walter L. Bierring, M.D., is Chairman of the Survey.

### PLAN OF SURVEY

#### River Sections

In general, the plan is to divide the river between Alton, Illinois, and St. Paul, Minnesota, into sections of approximately one channel mile in length. Each section will be given a rating with recommendations for control, no control or further study, as may be indicated. Basis for the

counties adjacent to and on both sides of the Mississippi river. The letter enlists cooperation of attending physicians in the reporting of all malaria cases; urges that blood films be taken from the patient *before any quinine or atabrine treatment is started*; recommends the taking of thick blood films and encloses illustrations together with a description of the technic of making such films. The thick film technic is preferred because the chances of finding the parasite are many times greater than with the thin film method so commonly used in the past.

#### Moving Picture

A technical film on malaria is available for use in medical meetings. The film illustrates the manner in which the disease is transmitted and out-



Fig. 1.

Shore of Mississippi River, near Sabula, Iowa, showing typical breeding area for *Anopheles quadrimaculatus* and *A. walkeri*.



Fig. 2.

Mississippi River near Fort Madison, Iowa, showing characteristic breeding area for *Anopheles quadrimaculatus*, principal vector of malaria.

rating will depend on population, number of malaria cases and *Anopheles quadrimaculatus* densities.

#### Reporting and Diagnosis

Paul R. Slater, M.D., Medical Officer of the Survey, has directed a letter to all physicians in

lines treatment. A chief purpose of the picture is to promote complete reporting of malaria cases.

#### Laboratory and Technician

A laboratory with facilities for examination of blood preparations has been set up in connection with the survey office in Davenport. In charge is



PERSONNEL OF THE MALARIA SURVEY

Following is a list of the persons assisting in the conduct of the Malaria and Mosquito Survey:

Name	Home Address	Date Employed	Period of Employment	Status
H. W. Poston	Des Moines, Iowa	May 1	6 months	Chief of Survey
P. R. Slater, M.D.	Burlington, Iowa	May 1	6 months	Medical Officer
Miss L. Beagle	Davenport, Iowa	May 1	5½ months	Stenographer
William Chalgren	Minneapolis, Minnesota	June 12	3 months	Junior Botanist
H. D. Pratt	University Farm, St. Paul, Minnesota	June 12	3 months	Junior Entomologist
L. D. Beadle	Platteville, Wisconsin	June 12	3 months	Junior Entomologist
S. L. Andelman	Chicago, Illinois	June 16	3 months	Assistant Medical Officer
T. Duncan Brown	Jacksonville, Illinois	June 23	5 months	Laboratory Technician

The office of the Interstate Malaria Survey is 823 Davenport Bank Building, Davenport, Iowa.

a competent technician, prepared to examine any thick film smears which physicians will send in.

Consultant

Mr. J. S. Robertson, Jr., Memphis, Tennessee, Sanitary Engineer, Office of Malaria Investigations, acts as consultant to the survey.

Initials	Age	Sex	County	Reactions
*J.L.M.	4	M	Dallas	1:80
L.H.	42	M	Van Buren	1:160
M.A.	5	F	Mahaska	Fatal Case
M.R.	39	M	Monroe	1:640
R.S.	8	F	Jackson	1:640
M.G.	14	F	Boone	1:40
P.A.	12	F	Lee	1:160

\*Reported in June number of the JOURNAL, page 249.

Attending physicians who reported cases L.H. through P.A. as above listed, are respectively: H. A. Gray, M.D., Keokuk; J. L. Ravitts, M.D., Montezuma; H. J. Richter, M.D., Albia; John W. Jordan, M.D., Maquoketa; A. B. Deering, M.D., Boone; and H. D. Harper, M.D., Ft. Madison.

Should additional cases come under early observation, physicians are asked to notify the State Department of Health. Special effort will be made to forward serum for treatment if requested.

ROCKY MOUNTAIN SPOTTED FEVER IN 1941

Thus far this year (to June 20), seven cases of Rocky Mountain spotted fever have been reported to the State Department of Health. One fatality occurred, the patient being a girl four years of age, with residence in Mahaska County.

The following table gives information regarding age and sex of reported cases, county of residence and agglutination reactions:

PREVALENCE OF DISEASE

Disease	May '41	April '41	May '40	Most Cases Reported From
Diphtheria	8	17	16	For the State
Scarlet Fever	109	226	224	For the State
Typhoid Fever	6	6	3	Osceola, Cerro Gordo, Jackson, Johnson
Smallpox	29	12	39	Dubuque, Clayton, Jones
Measles	765	1171	1174	For the State
Whooping Cough	199	197	149	Woodbury, Franklin, Boone, Webster
Brucellosis	22	24	16	For the State
Chickenpox	316	507	221	Woodbury, Mahaska, Dubuque, Montgomery, Black Hawk, Des Moines, Linn, Polk
German Measles	17	34	4	Story, Woodbury, Scott, Muscatine, Dubuque
Influenza	32	165	0	Mitchell, Clarke
Mumps	749	1300	363	Black Hawk, Woodbury, Mahaska, Des Moines, Lee, Hancock, Scott, Benton
Pneumonia	56	152	127	For the State
Poliomyelitis	1	1	2	Webster
Tuberculosis	54	12	19	For the State
Gonorrhea	98	114	130	For the State
Syphilis	186	257	198	For the State

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## MEDICINE IN THE NINETEENTH CENTURY

Let anyone who has the notion that medicine a century or so ago was merely a series of blood-lettings read Dr. Lawrason Brown's recently published book "The Story of Clinical Pulmonary Tuberculosis" to discover the error of his impressions. Indeed, one has the feeling (after reading Dr. Brown's book) that in some respects the physician of today does not compare any too brilliantly with his brother practitioner of that early period.

Consider, for instance, that in Paris about 1820 when Laënnec was developing the stethoscope it was the custom in the hospitals to begin ward rounds before daylight, to perform postmortem examinations on nearly one hundred per cent of all patients dying in public hospitals, for the chief of the service to discuss the clinical condition of the patients on the wards in both Latin and French with his students, and then to follow the body to the autopsy room where the history and clinical findings were presented in an attempt to correlate them with the postmortem revelations. Where in America do we find such industry displayed today?

Again in 1761 Auenbrugger had this to say about percussion. "To know the difference between the sounds which the thorax returns when in a healthy state and when afflicted with any latent internal disorder, let a man first strike his own thorax and then strike his thigh, and he will perceive that the one has a hollow and the other a kind of fleshy sound." From this premise, confirmed by experience, he deduced the following observations: "First, the more fleshy the sound the more dangerous the disease; secondly, the

greater space in the breast the fleshy sound occupies, the greater the patient's danger; thirdly, if the patient's left side be perceived to be thus affected, it is more dangerous than an affection of the right; fourthly, the upper part of the thorax thus affected is less dangerous than the lower part; fifthly, the forepart is less dangerous than the hinder part; sixthly, if the whole thorax be deprived of its sound, the symptom is certainly fatal; seventhly, if the breast bone returns no sound, it is fatal; eighthly, if the part which covers the heart returns the fleshy sound, it denotes the death of the patient."

It is also somewhat astonishing to learn what Laënnec, who died in 1826 in his forty-fifth year, accomplished in ten years of his active medical career. He separated and differentiated pulmonary tuberculosis, pulmonary abscess and gangrene, bronchiectasis, pulmonary emphysema, pulmonary infarction and pneumothorax. He described râles, vesicular and bronchial breathing, bronchophony, pectoriloquy, egophony, amphoric resonance, cracked-pot note and metallic tinkling. All of this was, of course, made possible by his discovery of auscultation. When asked how the discovery had been made he said: "In 1816 I was consulted by a young woman who presented general symptoms of disease of the heart. Owing to her stoutness little information could be gathered by application of the hand and percussion. The patient's age and sex did not permit me to resort to the kind of examination I have just described (that is, direct application of the ear to the chest). I recalled a well known acoustic phenomenon, namely, if you place your ear against one end of a wooden beam, the scratch of a pin at the other extremity is most distinctly audible. It occurred to me that this physical property might serve a useful purpose in the case with which I was dealing. Taking a sheaf of paper I rolled it into a very tight roll, one end of which I placed over the precordial region, whilst I placed my ear to the other. I was both surprised and gratified at being able to hear the beating of the heart with much greater clearness and distinctness than I had ever done before by direct application of my ear".

Add to these examples of medical pioneering a final one in the surgical field—the attempt by James Carson in 1820 to induce artificial pneumothorax on two patients through an open incision in order to collapse a tuberculous lung and arrest hemorrhage after proving practicability of the method through sound animal experimentation, including induced pneumothorax—and all claims to modern medicine being a twentieth century accomplishment should be abandoned.



### INCREASING PHYSICAL EFFICIENCY

Apropos of the national emergency and the physical efficiency of recruits is a pertinent contribution of Jokl and Cluver of Johannesburg, South Africa. These authors report the results of a five-year study of substandard recruits who were subjected to a special training course.

The investigation was conducted on a sample group of thirty-two young men who were unable to obtain or retain employment during a period of economic expansion. These men were deemed "fit" according to the standards of labor and recruiting offices, and by the army medical corps. All of these men had received a primary education; they possessed no visible ailments which rendered them "unfit". In spite of the fact that there were no demonstrable physical defects these men were obviously unfit. Tests of physical performance revealed that the power of endurance, the strength and the skill of these men were low; they were dull mentally, lacking in self control, bitter in their attitude; the incidence of minor illnesses was high.

For the purpose of combating the deteriorating influence of unemployment and to provide training and discipline for unemployed young men, a special battalion was established at military headquarters. The men were given a six months' course of training under military discipline. Physical training and drill were emphasized; suitable recreation and adequate diets were provided. According to the authors the result of the six months' course on the recruits was truly remarkable. "It is no exaggeration to say that the training transformed substandard youths, many of them of the poor white type, into normal young men." The evidence for this conclusion is first, medical proof, and second, the economic result.

To demonstrate the physical effects of the training course, various tests were conducted on five different occasions at intervals of six weeks. The mean gain in weight for the thirty-two men was 3.5 kilograms; the resting pulse rate dropped nine beats per minute; the breath-holding time increased from 40 to 68 seconds; the decline of postexercise vital capacity was from 750 to 220 cubic centimeters; the improvement in the three mile running time was from 26 to 23 minutes. The general attitude and appearance of the men were vastly improved; they no longer gave the impression of being dull.

The practical economic results of the improved physiologic state are reflected in the contrast in economic status before and after the period of training. Ninety per cent of 10,735 recruits procured employment during the years 1933 to 1939.

By making these men physically fit they were transformed from unemployed and unhappy dependents of the state into useful citizens, capable of hard work, economically rehabilitated.

Thus it has been demonstrated by a clinical experiment that anatomic integrity or the state of being physically "fit" does not necessarily imply physical efficiency. The measure of physical efficiency is a quantitative yardstick based on physical performance, and not a mere qualitative appraisal of the individual. The practical implications of this study in this country are numerous.

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### THE CLEVELAND MEETING

It is to be regretted that only seventy-three Iowa physicians were able to attend the Ninety-second Annual Session of the American Medical Association in Cleveland. Although hotel facilities were badly taxed (they were definitely inadequate) the exhibits and the scientific sessions were splendidly housed. The total registration at the meeting was 7,269 physicians, almost 1,200 more than attended the 1934 meeting in the same city.

The technical exhibits filled the basement floor of the large auditorium. As usual, a day could be spent profitably visiting the booths of the many firms who had displays. The booths were well lighted and attractive; the aisles were sufficiently wide to allow easy circulation; and the displays were most effective and educational.

The scientific exhibit room, while not as large as that of the technical exhibits, was very superior to the space allotted to this section at the New York meeting, and the exhibits reflected the improvement. Good lighting, ample aisle space and roomy booths made possible showings which were outstanding in their excellence. A hurried visit to this section was impossible. The exhibits commanded attention, and a physician could have gained the equivalent of several months' postgraduate education by a close scrutiny if he desired.

The scientific sessions were well attended and the programs were of exceptional interest. The meetings of the House of Delegates were also nearly 100 per cent in attendance, and Iowa can be proud of the fact that her three delegates and three alternates were present at nearly every session. It was a thoughtful assemblage of representatives who deliberated carefully and sanely on the problems confronting the medical profession and the American Medical Association. Medical preparedness was one of the main topics of the day, and this House carried forward the work

# Minutes of the Iowa State Medical Society

## Ninetieth Annual Session

### May 14, 15 and 16, 1941

#### Wednesday Morning, May 14, 1941

The opening session of the Ninetieth Annual Session of the Iowa State Medical Society, held at the Blackhawk Hotel in Davenport, May 14 to 16, 1941, was called to order by the President, Dr. Frank P. McNamara of Dubuque at nine a. m.

The Most Reverend Henry P. Rohlman, Bishop of Davenport, delivered the invocation. This was followed by greetings from Dr. Howard A. Weis of Davenport, president of the Scott County Medical Society. Dr. George B. Crow of Burlington, first vice president of the Iowa State Medical Society, responded for the Society.

The first address of the meeting was presented by Dr. Charles W. Mayo of Rochester, Minnesota. Dr. Mayo was introduced to the assembly by Dr. Frank R. Peterson of Iowa City, chairman of the surgical section. He discussed the subject: "Surgical Treatment of Carcinoma of the Lower Portion of the Colon."

Following Dr. Mayo's talk, there was a fifteen minute recess to visit exhibits. Dr. Clifford R. Watkin of Sioux City, chairman of the medical section, then introduced the next guest speaker, Dr. Frederick A. Willius of Rochester, Minnesota. Dr. Willius spoke on the subject: "Certain Considerations of Coronary Disease."

Dr. Earl B. Bush of Ames, president-elect, introduced the third guest speaker, Brigadier-General Shelley U. Marietta, M.D., of Washington, D. C., Assistant Surgeon General, United States Army, who spoke on the subject: "Military Medicine in Its General Application."

The morning program concluded with the presidential address delivered by Dr. Frank P. McNamara of Dubuque, and the meeting adjourned at twelve noon.

#### Thursday Morning, May 15, 1941

The Thursday morning session consisted of a symposium on cancer. Dr. Frank R. Peterson of Iowa City acted as chairman, presenting the five speakers. Dr. John H. Randall of Iowa City opened the program discussing cancer from a gynecologic standpoint; Dr. Paul F. Olson of Dubuque discussed cancer of the prostate gland; and Dr. Dean M. Lierle of Iowa City spoke on cancer as seen in the head and neck. Following Dr. Lierle's talk there was a fifteen minute intermission to visit exhibits, after which Dr. John W. Dulin of Iowa City finished the symposium by a discussion of cancer of the breast. Dr. Charles W. Mayo of Rochester, Minnesota, gave a general summing up of the four talks.

The final paper on the Thursday morning session was an address delivered by Dr. Nathan B. Van

Etten of New York, president of the American Medical Association, on the subject: "American Health and National Defense." The meeting adjourned at eleven forty-five a. m., after Dr. Van Etten's talk.

#### Thursday Afternoon, May 15, 1941

Thursday afternoon was devoted to a program presented by the Iowa Interprofessional Association. Every five years the Iowa State Medical Society will act as host to this group which is composed of nurses, dentists, pharmacists, veterinarians and physicians. Members of all five groups were present at this meeting, which was called to order at two p. m. by Mr. George W. McChane of Waterloo, president of the Association. Mr. McChane made a few remarks on the purposes of the organization, then introduced Dr. Raymond B. Allen of Chicago, Executive Dean of the University of Illinois Professional Colleges. Dr. Allen discussed the need for greater interprofessional cooperation in a democracy; his talk nicely keyed the spirit of the meeting.

Following this address, Mr. McChane introduced Dr. William H. Sebrell of Washington, D. C., Chief of the Division of Chemotherapy of the National Institute of Health. Dr. Sebrell, an authority on the subject of Vitamin B, gave an excellent talk on this topic. Dr. Philip C. Jeans of Iowa City was discussor for the paper.

The third talk of the afternoon was given by Dr. John M. Shaul of New York. Dr. Shaul spoke on the clinical aspects of the newer sulfonamide drugs; this was discussed by two veterinarians from the standpoint of their interests. Dr. D. B. Palmer of Minneapolis and Dr. C. H. Covault of Ames were the two discussors.

The meeting adjourned at four-thirty o'clock.

#### Friday Morning, May 16, 1941

Dr. Clifford R. Watkin of Sioux City introduced the first guest speaker Friday morning, Dr. Ralph C. Brown of Chicago, Clinical Professor of Medicine, Rush Medical College. Dr. Brown spoke on the subject: "Clinical Types and Treatment of Nonspecific Ulcerative Colitis."

Dr. Frank R. Peterson introduced the next guest, Dr. John T. Reynolds of Chicago, who was substituting for Dr. William C. Beck. He spoke on the subject: "Management of Lymphedema."

Following his talk there was a fifteen minute intermission to visit exhibits, after which Dr. Milton C. Winternitz of New Haven, Professor of Pathology at Yale University, discussed the subject: "Some Aspects of the Relation of the Kidneys to Cardiovascular Disease."

Dr. Samuel Salinger of Chicago, Clinical Professor of Otolaryngology, Loyola University School of Med-



icine, guest speaker for the eye, ear, nose and throat section, discussed the subject: "Sinus Trouble from the General Standpoint."

Following this talk, Dr. McNamara installed Dr. Earl B. Bush as the new president of the Society. Dr. Bush announced his committee appointments for the coming year; these were approved by the session. Dr. Parker gave a report of the House of Delegates session, and also announced the figures of attendance at the meeting as follows: 504 Iowa physician-mem-

bers; 108 Woman's Auxiliary members; 73 commercial exhibitors; and 134 guests; making a total registration of 819 persons. He reported that Des Moines would be the convention city in 1942, and that the section chairmen were as follows: medical section, Dr. A. A. Schultz of Fort Dodge; surgical section, Dr. T. F. Suchomel of Cedar Rapids; and eye, ear, nose and throat section, Dr. F. E. Powers of Boone.

The meeting adjourned at twelve noon.

## Section on Medicine

### Wednesday Afternoon, May 14, 1941

The first session of the Section on Medicine, held in connection with the Ninetieth Annual Session of the Iowa State Medical Society, at the Hotel Blackhawk in Davenport, May 14 through 16, 1941, convened at two p. m. with Dr. Clifford R. Watkin of Sioux City, chairman of the section, presiding.

The first paper was given by the guest speaker, Dr. Frederick A. Willius of Rochester, who discussed the subject: "Recognition of the Normal Heart."

After this four papers were presented as follows:

"Etiology and Treatment of Iron Deficiency Anemias," by Dr. Willis M. Fowler of Iowa City; discussed by Dr. Aldis A. Johnson of Council Bluffs and Dr. Fred Sternagel of West Des Moines.

"Clinical Problems of Infectious Mononucleosis," by Dr. Julian E. McFarland of Ames; discussed by Dr. Eugene F. Van Epps of Clinton and Dr. John R. Parish of Grinnell.

"Diagnosis of Gallbladder Disease," by Dr. Edward H. Sibley of Sioux City; discussed by Dr. Donald W. Leik of Dubuque and Dr. Charles C. Colleston of Spencer.

"Diagnosis and Treatment of Infections of the Upper Urinary Tract," by Dr. Merrill M. Benfer of Davenport; discussed by Dr. Gerald V. Caughlan of

Council Bluffs and Dr. Carl W. Smith of Dubuque.

The meeting adjourned at four-thirty o'clock.

### Friday Afternoon, May 16, 1941

Dr. Ralph C. Brown of Chicago, guest speaker, gave the first address on the Friday afternoon program, discussing the subject: "Hydrochloric Acid Neutralization and Other Factors in Treatment of Gastric and Duodenal Ulcers." He was introduced by the chairman of the section, Dr. Clifford R. Watkin, who presided over the afternoon session. Other papers presented were as follows:

"Significant X-ray Findings in Heart Disease," by Dr. Harold C. Bone of Des Moines; discussed by Dr. Robert N. Larimer of Sioux City.

"Modern Aspects of Diagnosis and Management of Hypertension," by Dr. Edward W. Anderson of Des Moines; discussed by Dr. Herbert W. Rathe of Waverly and Dr. Evon Walker of Ottumwa.

"The Use and Abuse of Sedatives," by Dr. Charles F. Obermann of Cherokee; discussed by Dr. Albert A. Schultz of Fort Dodge and Dr. Leslie E. Weber of Wapello.

"Treatment of Pneumonia," by Dr. Benjamin F. Wolverton of Cedar Rapids; discussed by Dr. Clarence P. Phillips of Muscatine and Dr. Phillips E. Lohr of Churdan.

The meeting adjourned at four-thirty o'clock.

## Section on Surgery

### Wednesday Afternoon, May 14, 1941

The opening session of the Section on Surgery, held in connection with the Ninetieth Annual Session of the Iowa State Medical Society at the Hotel Blackhawk in Davenport, May 14 through 16, 1941, was called to order by the chairman, Dr. Frank R. Peterson of Iowa City, at two p. m.

The first paper of the afternoon was presented by Dr. Gerrit Maris of Hull. The subject was "Intussusception"; discussed by Dr. Merle J. Brown of Davenport and Dr. Channing E. Dakin of Mason City.

Dr. Wendell L. Downing of LeMars presented a paper on the subject: "Acute Pancreatic Necrosis—

The Unsolved Acute Abdominal Catastrophe,"; discussed by Dr. Henry F. Dolan of Anamosa and Dr. Harry A. Amesbury of Clinton.

The third paper, on the subject: "The Prophylactic and Therapeutic Use of Oxygen in the Surgical Patient," was given by Dr. Stuart C. Cullen of Iowa City. Dr. Lawrence A. Block of Davenport and Dr. George H. Steele of Belmond were discussers.

Dr. William Rankin of Keokuk spoke on the subject: "Surgical Abdominal Conditions in Infants,"; discussed by Dr. Lee E. Shafer of Davenport and Dr. George M. Crabb of Mason City.

Dr. Clyde B. Meffert of Cedar Rapids gave the final paper of the afternoon on the subject: "Non-Malignant Lesions of the Large Bowel"; discussed

by Dr. Elwood P. Russell of Burlington and Dr. Leo C. Nelson of Jefferson.

The meeting adjourned at four-thirty p. m.

#### Friday Afternoon, May 16, 1941

The Friday afternoon session of the Section on Surgery was devoted to a symposium on obstetrics, and Dr. Roy I. Theisen of Dubuque acted as chairman in the place of Dr. Peterson. He called the meeting to order at two p. m. and introduced the

guest speaker, Dr. Joseph L. Baer of Chicago. Dr. Baer discussed the significance of diagnosis in obstetrics.

Dr. Robert M. Collins of Council Bluffs spoke on the relation of the thyroid gland to menstrual bleeding; Dr. Cecil W. Seibert of Waterloo presented a paper on the practical application of obstetric analgesia; and the meeting was concluded about four p. m. after the showing of some motion pictures on obstetric subjects and an informal discussion.

## Section on Ophthalmology, Otology and Rhinologyngology

#### Wednesday Afternoon, May 14, 1941

The opening meeting of the Section on Ophthalmology, Otology and Rhinologyngology, held in connection with the Ninetieth Annual Session of the Iowa State Medical Society at the Hotel Blackhawk in Davenport, May 14 through 16, 1941, was called to order at two p. m. Dr. Elmer P. Weih of Clinton, chairman of the section, presided.

The following papers were presented:

"Headaches of Ocular Origin," by Dr. Raymond J. Stephen of Cedar Rapids; discussed by Dr. Abbott M. Dean of Council Bluffs and Dr. Fred F. Agnew of Independence.

"Newer Drugs in Ophthalmology and Otolaryngology," by Dr. John H. Tait of Des Moines; discussed by Dr. William P. Hofmann of Davenport and Dr. John E. Rock of Davenport.

"Actinic Therapy in Middle Ear Infections," by Dr. Frederick J. Chapman of Keokuk; discussed by Dr. Horace E. Hosford of Burlington and Dr. Carl E. Sampson of Creston.

"Industrial Ophthalmology," by Dr. Gilbert C. Struble of Ottumwa; discussed by Dr. Warren H. Foster of Clinton and Dr. Albert J. Joynt of Waterloo.

"Causes of Blindness in Iowa as Related to Blind Assistance Program," by Dr. Harold J. McCoy of Des Moines; discussed by Dr. George C. Albright of

Iowa City and Dr. Henry G. Langworthy of Dubuque.

The meeting adjourned at four-thirty p. m.

#### Friday Afternoon, May 16, 1941

The Friday afternoon meeting was called to order by the chairman of the section, Dr. Elmer P. Weih, at two p. m. Dr. Weih introduced the guest speaker, Dr. Samuel Salinger of Chicago, who addressed the group on the subject: "Rhinoplasty from the Cosmetic Point of View."

Dr. Herman C. Kluever of Fort Dodge spoke on the subject: "Drug and Food Sensitivity Complicating Corneal Ulcerations"; discussed by Dr. Carl A. Noé of Cedar Rapids and Dr. Frank H. Reuling of Waterloo.

A paper on the subject "Surgical Treatment of Chronic Dacryocystitis," was presented by Dr. James E. Reeder, Jr. of Sioux City. Dr. Benjamin F. Kilgore of Des Moines and Dr. Sumner B. Chase of Fort Dodge discussed it.

Dr. John A. Thorson of Dubuque spoke on "Intra-tracheal Anesthesia in Head Operations." Dr. Arthur C. Richmond of Fort Madison and Dr. Ralph C. Carpenter of Marshalltown discussed it.

A talk on the subject: "A Severe Gastro-intestinal Complication Following the Use of Sulfapyridine" was given by Dr. Sydner D. Maiden of Council Bluffs; discussed by Dr. William W. Pearson of Des Moines.

The meeting adjourned at four-thirty p. m.

## Transactions of the House of Delegates Iowa State Medical Society, Ninetieth Annual Session May 14, 15 and 16, 1941

#### Wednesday Afternoon, May 14, 1941

The opening session of the House of Delegates, held in connection with the Ninetieth Annual Session, Iowa State Medical Society in the Auditorium of the Peoples Light Building, Davenport, May 14, 1941, convened at three thirty-five o'clock, Dr. Earl B. Bush, Ames, the Speaker, presiding.

The Speaker: Gentlemen, we will open the ses-

sion of the House of Delegates. First we will have the roll call.

Secretary Parker: Mr. Speaker, I *move* that the official roll consist of the registration cards as signed by the delegates.

*The motion was seconded.*

The Speaker: It has been moved and seconded that the official registration cards constitute the roll



call. Those in favor signify by saying "aye"; contrary "no". *It is so ordered.*

The roll call showed the following delegates, alternates and state society officers present:

#### Delegates

Appanoose.....	J. C. Donahue
Audubon.....	W. H. Halloran
Black Hawk.....	E. E. Magee
Boone.....	A. B. Deering
Buchanan.....	F. F. Agnew
Buena Vista.....	M. A. Armstrong
Cerro Gordo.....	H. D. Fallows
Cherokee.....	C. F. Obermann
Chickasaw.....	P. E. Gardner
Clarke.....	H. E. Stroy
Clinton.....	R. T. Lenaghan
Decatur.....	G. P. Reed
Des Moines.....	J. T. Hanna
Dickinson.....	T. L. Ward
Dubuque.....	J. C. Kassmeyer
Emmet.....	E. E. Lashbrook
Henry.....	B. D. Hartley
Iowa.....	H. G. Moershel
Jackson.....	F. J. Swift
Jefferson.....	J. S. Gaumer
Johnson.....	E. M. MacEwen
Johnson.....	G. C. Albright
Jones.....	H. F. Dolan
Keokuk.....	C. L. Heald
Lee.....	B. J. Dierker
Linn.....	T. F. Suchomel
Louisa.....	J. H. Chittum
Lyon.....	L. L. Corcoran
Madison.....	I. K. Sayre
Marion.....	F. M. Roberts
Marshall.....	A. D. Woods
Mills.....	D. W. Harman
Monona.....	E. C. Junger
Muscatine.....	L. C. Howe
O'Brien.....	W. R. Brock
Osceola.....	H. W. Paulsen
Plymouth.....	W. L. Downing
Pocahontas.....	W. E. Gower
Polk.....	W. E. Baker
Pottawattamie.....	G. V. Caughlan
Sac.....	L. B. Amick
Scott.....	George Braunlich

Scott.....	W. C. Goenne
Sioux.....	Gerrit Maris
Story.....	G. E. McFarland, Jr.
Van Buren.....	L. A. Coffin
Wapello.....	C. A. Henry
Washington.....	W. L. Alcorn
Webster.....	A. A. Schultz
Woodbury.....	H. I. Down
Woodbury.....	R. H. McBride
Wright.....	R. D. Bernard

#### Alternates

Bremer.....	L. D. Jay
Butler.....	J. G. Evans
Humboldt.....	C. A. Newman
Linn.....	H. L. Van Winkle
Polk.....	F. W. Fordyce
Union.....	H. G. Beatty
Warren.....	E. E. Shaw

#### State Society Officers

President.....	F. P. McNamara
President-elect.....	E. B. Bush
Secretary.....	R. L. Parker
Treasurer.....	H. J. McCoy
Trustee.....	O. J. Fay
Trustee.....	L. R. Woodward
Councilor.....	L. L. Carr
Councilor.....	C. H. Cretzmeyer
Councilor.....	F. P. Winkler
Councilor.....	J. E. Reeder
Councilor.....	E. F. Beeh
Councilor.....	C. W. Ellyson
Councilor.....	H. A. Householder
Councilor.....	C. A. Boice
Councilor.....	R. C. Gutch
Councilor.....	J. G. Macrae

The Speaker: We will ask the approval of the minutes of the Friday morning session of 1940.

Dr. Magee: I move that the minutes of the Friday morning session of 1940 be adopted as printed in the July JOURNAL.

*The motion was seconded, put to a vote and carried.*

The Speaker: The report of the Secretary is next.

## Reports of Officers

### REPORT OF THE SECRETARY

House of Delegates, Iowa State Medical Society:

The following report for the year 1940 is respectfully submitted:

#### MEMBERSHIP

A tabulation of the membership record for 1940 will be found on the next page, but it may be summarized as follows:

Active Members (Life Members Included).....	2,475
Delinquent Members .....	24
Eligible Non-Members .....	202
Ineligible Non-Members .....	85
Physicians Not in Practice or Retired.....	172

This shows a gain of 45 more members for 1940 than for 1939; 20 fewer delinquent members; and four less eligible non-members. There was, however, an increase in the number of ineligible non-members and retired physicians. The number of life members

increased by two; we have at present 186 life members who do not pay dues but who receive all of the advantages of membership.

#### One Hundred Per Cent Counties

In 1939 we had twenty-seven counties with one hundred per cent membership in the State Society. In 1940 this increased to thirty-four counties, which are as follows:

Adair	Hardin
Adams	Howard
Boone	Humboldt
Buchanan	Ida
Buena Vista	Louisa
Cerro Gordo	Madison
Chickasaw	Marshall
Davis	Monona
Dickinson	Montgomery
Emmet	Muscatine
Floyd	Osceola
Grundy	Palo Alto

Poweshiek  
Sac  
Scott  
Shelby  
Story

Tama  
Washington  
Wayne  
Webster  
Wright

The counties which attained one hundred per cent membership in 1940, although not in 1939, were Buchanan, Buena Vista, Chickasaw, Floyd, Grundy, Humboldt, Monona, Montgomery, Muscatine, Palo Alto, Sac and Story. Those which did not attain it the second year were Henry, Marion and Mills. The membership of the entire society was greater than in any previous year, including 91 per cent of eligible physicians.

From the foregoing, you will see that we try to keep an accurate record of all physicians on file here in the central office of the Society. In order to attain this, we have to ask the assistance of the county society secretary twice a year. We understand how much work this means for him, and we appreciate his kindness and cooperation. We know if he realized how many calls we have for this information about physicians, he would not begrudge the time it costs him to keep us informed.

#### Life Members

Three years ago the House of Delegates passed a new rule regarding life membership in the State Society. That ruling now reads: "Any member of the Society who is in good standing may be entitled to life membership provided he has been recommended for such membership by his county society. He shall receive the transactions of the Society and enjoy all the privileges of members, and may be exempted from the payment of dues upon the vote of the House of Delegates." When the House of Delegates changed the rule in regard to life membership, it felt that the recommendation for life membership should be left to the county society which is, after all the best judge of whether or not a physician should be so honored. Last year the president appointed a committee to judge all requests and come before the House with recommendations about each individual application. I quote the report of that committee: "It is the consensus of this Committee that life membership should be granted only to physicians who are not in active practice, who are incapacitated because of sickness or disability, or who are in reduced financial circumstances and find it hard to continue their membership. The Committee does not feel that length of membership should be the criterion for awarding life membership, since probably one-third of the members of the State Society could be considered eligible on that basis."

This report was accepted by the House of Delegates on Friday, May 3, and it was also voted that the president should be authorized to appoint a committee each year to sift such requests prior to the annual meeting. This will be done prior to the 1941 meeting. I would like to point out that at the present time 7.5 per cent of our membership is made up of life members who do not contribute to the support of the Society, but who do receive all the advantages practice suits. I am sure none of us begrudges be-

stowing life membership upon physicians who fall of membership, including protection against malpractice into the categories listed above. The point to keep in mind is that a substantial part of the support of the Society comes from dues, and if the percentage of life members continues to increase rapidly, the income will drop and the load per individual will increase.

#### Care of the Indigent

The problem of medical care for the indigent is still with us, although it is a problem which is being handled more satisfactorily in most of the counties. The central office did not devote as much time as usual to this problem during 1940, although the chairman of the Medical Economics Committee aided and advised several individual counties in making their contracts. A start was made toward a survey to determine the true cost of medical care for the indigent and the best type plan for rendering such service. More will be done on that phase during 1941.

#### Medical Preparedness

Medical preparedness became one of the big problems of the State Society in the summer of 1940. The chairman of the Medical Preparedness Committee singlehandedly carried on a great part of the work, but this office aided him by preparing letters and return cards to use in pushing the return of the questionnaires to the American Medical Association. We also made arrangements for meetings in every councilor district at which the subjects of medical preparedness and legislative interests were discussed. We aided him in the setting up of county committees on medical preparedness, and finally, in determining the standards which the county societies should use in determining what physicians should be exempt from military service. Early in January of 1941, the state committee met and surveyed the county lists, and from them made up the final list to be sent to the War Department. It also passed upon the status of reserve officers, certifying to those who should be left at home to care for the civilian population.

#### State Society Services

The central office of the State Society exists to serve you. We are glad to have you write us when problems arise. Sometimes we may have the solution ready for you because of similar requests; sometimes we may have to work it out as best we can. However, we want to serve as a clearing house for the entire Society, and hope you will call upon us for advice or help.

#### Financial Report

The financial report for the year 1940 is to be found in the Treasurer's report which follows. The income and expenses of the Society are given in summarized form. A glance at this will show you how much money is brought in by dues, and how much through other mediums such as the Journal, the Speakers Bureau, the annual meeting, interest and miscellaneous. The expenditures have been broken



## 1940 MEMBERSHIP RECORD

County	1940 Membership	Delinquent Members	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage of Eligible Physicians Who Are Members
Adair	8	.....	.....	.....	1	100
Adams	7	.....	.....	.....	.....	100
Allamakee	10	1	2	2	.....	83
Appanoose	14	.....	3	.....	.....	82
Audubon	9	.....	.....	.....	.....	90
Benton	19	2	2	.....	1	83
Black Hawk	65	.....	2	6	3	97
Boone	21	.....	.....	.....	2	100
Bremer	17	1	1	1	.....	89
Buchanan	23	.....	.....	1	.....	100
Buena Vista	18	.....	1	.....	1	95
Butler	11	.....	3	.....	.....	79
Calhoun	22	.....	.....	.....	.....	100
Carroll	23	.....	3	.....	3	88
Cass	20	.....	2	1	.....	90
Cedar	11	1	6	.....	.....	61
Cerro Gordo	47	.....	.....	2	1	100
Cherokee	19	.....	1	.....	5	95
Chickasaw	16	.....	.....	.....	.....	100
Clarke	8	.....	1	.....	.....	89
Clay	12	.....	4	2	.....	75
Clayton	19	2	3	.....	1	79
Clinton	43	.....	4	2	1	91
Crawford	14	.....	4	.....	.....	78
Dallas-Guthrie	45	.....	6	1	1	88
Davis	12	.....	.....	.....	.....	100
Decatur	7	.....	2	.....	.....	78
Delaware	12	1	6	.....	1	63
Des Moines	34	2	1	1	.....	92
Dickinson	13	.....	.....	.....	.....	100
Dubuque	71	.....	4	.....	2	95
Emmet	14	.....	.....	.....	.....	100
Fayette	22	.....	11	1	1	67
Floyd	17	.....	.....	1	1	100
Franklin	11	.....	3	.....	.....	79
Fremont	11	.....	1	.....	.....	92
Greene	21	.....	2	.....	1	91
Grundy	12	.....	.....	.....	.....	100
Hamilton	17	2	1	.....	2	85
Hancock-Winnebago	19	.....	6	.....	2	76
Hardin	27	.....	.....	.....	5	100
Harrison	14	1	5	1	.....	70
Henry	19	.....	1	.....	.....	95
Howard	10	.....	.....	.....	1	100
Humboldt	10	.....	.....	.....	.....	100
Ida	13	.....	.....	.....	2	100
Iowa	11	.....	4	.....	4	73
Jackson	15	.....	2	1	1	88
Jasper	27	1	4	.....	1	84
Jefferson	17	.....	1	1	3	94
Johnson	159	1	6	.....	8	95
Jones	13	.....	2	1	.....	87
Keokuk	15	1	3	4	.....	79
Kossuth	11	1	3	2	1	73
Lee	41	2	2	4	1	93
Linn	103	.....	14	3	4	88
Louisa	9	.....	.....	1	2	100
Lucas	13	.....	1	.....	1	93
Lyon	9	.....	1	.....	2	90
Madison	11	.....	.....	.....	1	100
Mahaska	23	.....	1	1	3	96
Marion	21	.....	1	2	14	95
Marshall	44	.....	.....	.....	2	100
Mills	11	1	1	.....	.....	85
Mitchell	13	.....	3	.....	.....	81
Monona	15	.....	.....	.....	1	100
Monroe	9	.....	4	.....	.....	69
Montgomery	18	.....	.....	.....	1	100
Muscatine	24	.....	.....	2	2	100
O'Brien	17	.....	2	.....	1	89
Osceola	9	.....	.....	.....	.....	100
Page	19	.....	6	1	3	76
Palo Alto	13	.....	.....	.....	.....	100
Plymouth	14	.....	7	1	2	67
Pocahontas	13	.....	4	1	.....	77
Polk	240	1	21	12	53	92
Pottawattamie	57	2	3	3	2	92
Poweshiek	22	.....	.....	.....	.....	100
Ringgold	7	.....	1	.....	1	88
Sac	21	.....	2	.....	.....	91
Scott	89	.....	.....	12	3	100
Shelby	10	.....	.....	.....	1	100
Sioux	18	.....	.....	.....	.....	100
Story	36	.....	.....	1	2	100
Tama	25	.....	.....	.....	2	100
Taylor	7	.....	.....	.....	1	88
Union	13	.....	1	.....	.....	93
Van Buren	11	.....	1	.....	.....	92
Wapello	43	.....	2	2	.....	96
Warren	11	.....	2	.....	1	87
Washington	20	.....	.....	.....	.....	100
Wayne	12	.....	.....	.....	.....	100
Webster	45	.....	.....	.....	2	100
Winneshiek	14	.....	.....	1	.....	93
Woodbury	120	.....	3	6	5	98
Worth	6	.....	1	.....	.....	86
Wright	24	.....	.....	.....	2	100
Total	2,475	24	202	85	172	Average 91 %

down into departments so that you may see the amount each is using. The net worth of the Society is also given in the statement of investments and funds on hand.

The books of the Society have been audited by a certified public accountant, Widdup and Company, and a copy of the report is on file in the central office as well as in the offices of Dr. L. R. Woodward of Mason City and Dr. John I. Marker of Davenport, trustees. Any member of the Society may see this detailed record of finances at one of the above mentioned offices. It is available to all members.

Robert L. Parker, Secretary

Secretary Parker: Mr. Speaker, I move that the report as published in the handbook be approved.

*The motion was seconded.*

Secretary Parker: Before that is voted on, I would like to make an additional report and some remarks as to the membership, for fear some of you have not read your handbook. In 1939 we had twenty-seven 100 per cent counties, and this last year we had thirty-four 100 per cent counties. I would like to distribute those 100 per cent counties among the councilor districts as follows:

First District.....	3—	100	per	cent	counties
Second District.....	3—	"	"	"	"
Third District.....	5—	"	"	"	"
Fourth District.....	3—	"	"	"	"
Fifth District.....	3—	"	"	"	"
Sixth District.....	5—	"	"	"	"
Seventh District.....	1—	"	"	"	"
Eighth District.....	4—	"	"	"	"
Ninth District.....	2—	"	"	"	"
Tenth District.....	3—	"	"	"	"
Eleventh District.....	2—	"	"	"	"

The Speaker: You have heard the motion and the second. Any questions?

*The question was put to a vote and carried.*

Dr. Suchomel: Mr. Speaker, I move that all of the reports as published in the handbook be received.

*The motion was seconded, put to a vote and carried.*

The Speaker: We will have the report of the Treasurer next. Is the Treasurer here? (Absent) We will omit that and go to the report of the Board of Trustees.

#### REPORT OF THE BOARD OF TRUSTEES

A review of the work of the State Society during 1940 cannot help but impress one with the greatly increased activity of many of the committees and departments. The facilities and personnel of the central office have been taxed to the limit, in fact, have been overtaxed at times by the size and scope of some of the work. Just as medical science is constantly developing, so are the problems which confront the medical profession. The interest of the public in health problems, and the desire of many organizations to have more voice in the rendering of medical service, throw larger burdens on the officers and working personnel. They must keep thoroughly informed of each new movement along health lines, and must be ready at all times to dis-

cuss them courteously and fully with persons who inquire for information. The physicians themselves are becoming more conscious of the value of medical organization, and are requesting more information on legislative, public health and economic matters. This is a healthy sign, and we do not begrudge the work entailed in answering such requests, but merely call attention to the fact that it places more responsibility on the working personnel.

As a matter of fact, the central office has tried to keep the membership fully informed of new developments as they have arisen. In the course of a year, almost 60,000 pieces of mail are sent to the physicians in the state and to the members of the Woman's Auxiliary. Legislative bulletins are mailed to every member with full information of what is going on in that field. The trustees have taken care to provide adequate equipment with the result that a three-page bulletin can be prepared and mailed to the 2400 members in eight hours. Early in January, 1941, the trustees purchased a postage meter which will further help with the mailing. It is estimated that the saving in purchase price of envelopes for a year will offset the cost of the machine, as well as add to the neatness and efficiency of the mailings.

The medical preparedness program has entailed much additional work at the central office in spite of the fact that the chairman, single-handedly, did a most remarkable piece of work in getting returns of questionnaires on the qualifications of the doctors in the state. Under his supervision, two physicians recommended by their county medical society were suggested for each draft board in Iowa; medical advisory boards consisting of specialists in various phases of medicine were formed in every district; physicians were suggested for five appeal boards; and specialists were procured to help with the induction of conscripted men at Fort Des Moines. A tabulation of physicians was also made, and a report given to the War Department on what physicians in the state should be exempt from military service. The work of this committee is not done, and the central office will be ready at all times to help in the program of medical national defense.

The Board of Trustees employs four persons to carry on the work of the State Society under the direction of the officers and committees. Miss Alma Jensen has charge of the membership records and in addition helps with the work of the other three departments. Miss Virginia Stewart is assistant to the editor and she is responsible for most of the detail work which is so necessary in the publication of a journal. Working under the supervision of the editor, she takes the responsibility for many phases of the work. Only a person who has some familiarity with newspaper or magazine work can appreciate the arduous work which is necessary for a good publication.

Mrs. Dorothy Dolk is secretary of the Speakers Bureau, and she carries on the work involved in presenting all of the postgraduate courses, all of the county society programs, lay group talks, and the



weekly radio broadcasts. The work of the Bureau is growing constantly, and it has more to offer the physicians each year. Her work plays a large part in medical education in the state.

Miss Mary McCord, the executive secretary, has the task of coordinating the work of all the State Society committees. She acts as secretary to all of them and aids them in their programs. Hers also is the task of running the office, and taking charge of the details of each annual meeting. She is familiar with all activities of the Society.

The Board has gone into this explanation of the working of the central office because it does not believe all of the members of the State Society realize what a business organization it has grown to be. It has done this, however, without necessitating an increase in dues. The financial condition of the Society is good. Although the income from dues falls by \$13,000.00 to meet the expenses, income from other sources takes care of them. The Board has considered the advisability of changing dues, and does not believe it necessary at this time. The number of life members remains practically the same as in 1939; and although there will be a large loss of revenue from physicians whose dues are waived because of military service, the trustees believe the State Society should carry these physicians as members in good standing without payment of dues by drawing upon its reserve if necessary. Therefore, the Board recommends that dues for 1942 be \$10.00.

The trustees wish to express again their appreciation of all of the work being done by the various committees and officers. It feels that the increase in membership is largely due to the fact that this is a working organization, and that the doctors in Iowa are alive to their responsibilities. This cannot help but make for greater unity and strength.

Oliver J. Fay, Chairman  
John I. Marker  
Lee R. Woodward

Dr. Fay: I move, Mr. Speaker, that the report of the Board of Trustees as published in the handbook be adopted.

*The motion was seconded, put to a vote and carried.*

The Speaker: The report of the Council.

#### REPORT OF THE CHAIRMAN OF THE COUNCIL

The Council may well look with satisfaction upon its accomplishments in 1940. Through its Executive Cancer Committee, it compiled many data on cancer cases, their incidence and cost, and also cooperated in the proposed establishment of four more cancer clinics in the state. Its Tuberculosis Committee was very active and succeeded in setting up county committees on tuberculosis in about one-third of the state. This was done in the six months of the Committee's existence, speaking well for the future work it may accomplish. The Speakers Bureau had a very successful year, expanding its usefulness by transcribing talks by eminent speakers for later use at smaller meetings. Detailed reports of all of these committees will be given by the chairmen, but speaking for the

Council, I wish to thank the workers who have done so well in these three fields.

During October each councilor planned a meeting to which all of the physicians in his district were invited. The program for this meeting included talks on matters of legislative interest, medical preparedness, and State Society affairs in general. Attendance was fairly representative, and I believe the meetings accomplished their object in bringing to the profession a more thorough knowledge of the problems which confront us.

Herewith are submitted the reports from the eleven councilor districts.

F. P. Winkler, Chairman

#### REPORTS FROM COUNCILOR DISTRICTS

##### First Councilor District

Medical preparedness seems to have been the principal activity in our district for the past six months overshadowing all other programs. Nevertheless, our district has been very active in public health work. Our counties responded 100 per cent to the statewide smallpox vaccination and diphtheria immunization programs. We seem to lack interest in interprofessional organizations and some good hard work is needed to stimulate this worthwhile movement. I am grateful for the cooperation of my deputy councilors and for the cheerful way they have accepted and carried out their responsibilities. Herewith you will find the report from each deputy councilor in my district.

L. L. Carr, Councilor

Allamakee County. Public Health Program: We cooperated with the statewide smallpox vaccination program as well as we could. Between 75 and 100 children were vaccinated at Lansing. No child health or orthopedic clinics were held in our county. We have no interprofessional organization. We have no fracture committee, but did cooperate with the tuberculosis program. Our society also worked with the cancer educational program of the Women's Field Army.

We lost two county members from our society, doctors who entered the army and Veteran's Bureau service. We are meeting some time in February to reorganize our county society.

J. W. Thornton, Deputy Councilor

Bremer County. The Bremer County Medical Society did not cooperate with the statewide smallpox vaccination program because we have our own public health program. In 1939 children of school age and those in the preschool age were vaccinated. Some of the Waverly physicians did this work in the towns of Bremer county where it was not done by the local physician. We also inoculated these same children against diphtheria. In 1940 Schick tests were given to all children who had been inoculated the previous year. No inoculation or vaccination was done in 1940, but in 1941 we will again conduct such a program.

We are cooperating with the orthopedic department at Iowa City by having a nurse come to Waverly at stated intervals to give the infantile paralysis

patients physical therapy treatments. We do not have a functioning interprofessional organization. Our fracture and tuberculosis committees have been active in 1940. Fracture lectures have been given and we have had one chest clinic. Lectures have been given on cancer by different men in cooperation with the Women's Field Army. We have had ten scientific county meetings, one each month except in July and August. These meetings consisted of a dinner at 6:30 followed by a lecture given by some out of town physician. Movies were commonly shown to accompany the lecture.

The Bremer County Medical Society is in a very healthy condition. We still have one ineligible member and one or two who have not paid their dues for 1940.

F. R. Sparks, Deputy Councilor

Chickasaw County. Public Health Program: We cooperated with the statewide smallpox vaccination program. Children were vaccinated and immunized for diphtheria in all cities and towns in the county. We also took part in the child health and orthopedic clinics. Neither our fracture nor tuberculosis committees have held programs this year but our society did cooperate in the cancer educational program of the Women's Field Army.

We feel we are progressing about as usual, all trying to carry the banner of medicine as high as we can. We have held several meetings during the year. I believe all doctors in the county are members of the county and state societies.

Paul E. Gardner, Deputy Councilor

Clayton County. Public Health Program: We cooperated with the statewide smallpox vaccination program. In my opinion about 500 children were vaccinated for smallpox and immunized against diphtheria. No child health or orthopedic clinics were held this year, since we carried out extensive clinics in 1939. We have an interprofessional organization but it is not functioning at present. We cooperated with the Women's Field Army in the cancer educational program.

We enjoyed a fine round table discussion on obstetrics and pediatrics during the year, which was very well attended. We have lost three members, two going to the Army and one changing location.

P. R. V. Hommel, Deputy Councilor

Fayette County. Public Health Program: The Fayette County Medical Society took an active part in the public health program, just as it did the year before. At a regular meeting of the society the county members organized under the leadership of Dr. Elizabeth S. Kennedy. I would estimate over a thousand children were vaccinated for smallpox and also immunized against diphtheria.

We have no interprofessional organization. A tuberculosis case-finding clinic was sponsored by the society and chest x-rays of all cases were taken at the Mercy Hospital in Oelwein. An orthopedic clinic was also held with 187 patients being examined.

Two regular meetings and two social meetings were held during the year. Several special meetings

on medical preparedness were necessary. We have several eligible members who are delinquent in their dues, and one new member.

C. C. Hall, Deputy Councilor

Floyd County. Public Health Programs: We cooperated with the statewide smallpox vaccination program, examined the preschool children and high school students and also examined the 4-H Club girls. Our interprofessional organization was not active. We had no special fracture program except some case reports during the year. The Women's Field Army is being reorganized. One member was lost from the society by death. We again have 100 per cent membership.

Ray A. Fox, Deputy Councilor

Howard County. Public Health Programs: Howard County has been about as active or inactive as usual. We conducted an inoculation drive in November and all of the members helped in both the smallpox and diphtheria programs to the fullest extent. Because of fairly recent similar drives we had only about a thousand children treated, but the response was very gratifying to all concerned.

We have no interprofessional organization. One member attended the fracture meeting and made his report at our annual meeting. Our member of the tuberculosis committee has made no report. We have heard nothing regarding a Women's Field Army. We have cooperated promptly with the medical preparedness program.

Wm. A. Bockoven, Deputy Councilor

Mitchell County. Public Health Programs: Our county took part in the smallpox program and vaccinated about three hundred children. At the same time one hundred immunizations were given for scarlet fever and diphtheria.

We have no interprofessional organization; and we had no fracture program. A follow-up of our previous tuberculosis survey was made. Dr. R. A. Culbertson of St. Ansgar was called to the army medical service.

T. S. Walker, Deputy Councilor

Winneshek County. Our county society has been active and many very instructive scientific programs were held during the year. These programs were conducted for the most part by doctors from our society. In April we sponsored a meeting at the Decorah hospital at which time Dr. E. D. Plass and Dr. P. C. Jeans of the State University conducted a round table discussion on interesting obstetric conditions necessitating premature delivery, and care of the premature baby.

Our society sponsored the smallpox vaccination and diphtheria inoculation program, with almost 100 per cent results. Dr. J. J. Daly was chairman of this activity; 1,767 children were vaccinated and 1,982 inoculated. Our society cooperated with Dr. Ennis in giving radio health talks. The cancer program has not been carried out, due to lack of information about its duties. A program on early diagnosis of tuberculosis was conducted by Dr. J. Carl Painter of Sunny Crest Sanatorium in Dubuque.

L. J. Hospodarsky, Deputy Councilor



### Second Councilor District

**Butler County.** Butler County Medical Society did not cooperate in the statewide smallpox vaccination, neither did the society have any definite public health program of its own. It has no interprofessional organization. There was no special work done by fracture or tuberculosis committees during the past year, but the individual doctors cooperated with the work of the Women's Field Army in the matter of preventive cancer education.

Two physicians moved from the county during the year but neither was a member of the county medical society. One meeting for the election of officers and other routine business was held.

Bruce Ensley, Deputy Councilor

**Cerro Gordo County.** The following information has been collected for the yearly handbook.

**Public Health Programs:** The society cooperated fully in the statewide smallpox vaccination and diphtheria inoculation program. It also holds a monthly clinic in conjunction with the Women's Club and it is attempting to establish a class on prenatal care. There is no interprofessional organization in the county. The fracture committee has not been active for the past year. The tuberculosis committee has conducted the countywide tuberculin testing program.

The cancer program has been backed by the society but the Women's Field Army has been rather inactive, due, I think, to a poor choice of leaders.

Jay E. Houlahan, Deputy Councilor

**Franklin County.** The Franklin County Medical Society was not an active participant in State Society activities during 1940. We did not conduct any public health programs; our fracture, tuberculosis and cancer committees were inactive; and we have no interprofessional association.

J. C. Powers, Deputy Councilor

**Hancock County.** We did not cooperate in the statewide smallpox vaccination program. We did not have a child health or orthopedic clinic; we do not have a public health program of our own and we do not have an interprofessional organization. We had no fracture program, but we did put on a countywide tuberculosis program in cooperation with the Iowa Tuberculosis Association. We have cooperated in the cancer educational program.

Geo. A. Bemis, Deputy Councilor

**Humboldt County.** This year Humboldt County can report that all eligible physicians in this county are members of the county medical society. Two young men began their practice in Humboldt last summer—Dr. Asa S. Arent, son of Dr. Asaph Arent, and Dr. James H. Coddington, son of Dr. J. K. Coddington. The fathers have each practiced in this community forty years, and we are glad to have the sons establish themselves here. This county has cooperated with the statewide smallpox and diphtheria immunization programs. Because previous recent projects had been held here, there were only about 175 immunizations. Last spring the Humboldt physicians examined 390 children in the local schools.

There is no active interprofessional organization in this county. A tuberculosis case-finding program was conducted in this county last February. About seventy contacts and suspects were x-rayed. The Women's Field Army was routed in this territory, due to lack of a county chairman. We are heartily in sympathy with their work and hope the campaign will be much more successful next year.

An excellent postgraduate course was held here last fall, thanks to the splendid help given us by the Speakers Bureau in arranging the program and securing lecturers. The meeting place and free "cokes" were furnished by the local Coca Cola plant.

Ivan T. Schultz, Deputy Councilor

**Kossuth County.** In the year 1940 the Kossuth County Medical Society held two business meetings. We did not cooperate in any public health program, held no interprofessional meetings, and sponsored no special programs. In fact, our society has been dormant for at least a year.

John N. Kenefick, Deputy Councilor

**Winnebago County.** We did not cooperate in the statewide smallpox vaccination program in 1940 because we held a program in 1939, and our fracture and tuberculosis committee did not present programs, although we have a fracture program planned for the near future. We cooperated with the Women's Field Army in its educational program, but we do not have an interprofessional association.

T. J. Irish, Deputy Councilor

**Worth County.** The Worth County Medical Society as an organization was rather inactive during the past year. Only one meeting was held during the twelve months. Members, however, attended meetings in neighboring counties where scientific meetings were held. The membership remained at six with no deaths and no new physicians located in the county. All eligible physicians in the county were paid up members in good standing of the County and State Societies.

A very successful cancer program was carried out by the Women's Field Army and their efficient corps of workers in every part of the county. Thus, Worth County, the smallest in the district, went over the top with only five other counties in the state exceeding their quotas of one enlistment for each one hundred population. Our society cooperated in this work but most credit is due to a group of energetic women who really went out and worked. Our county medical relief system continues on a fee basis and is working out quite satisfactorily as in the past, a reduced fee bill having been agreed on by the county society and the board of supervisors.

S. S. Westly, Deputy Councilor

**Wright County.** We cooperated in the statewide smallpox and diphtheria immunization programs, with the result that 718 immunizations (268 rural, 448 towns) and 430 vaccinations (115 rural, 314 towns) were made. All of the physicians, the county superintendent of schools, the public school officers and teachers cooperated in this program. We did not have any orthopedic or pediatric clinics, and

our interprofessional organization is inactive. Our fracture and tuberculosis committees did not present programs, but individual members of the society attended the state fracture clinic at Cedar Rapids, and the tuberculosis clinics in Des Moines. We had no cancer program.

We have twenty-three physicians in Wright County, all of whom are members of the county medical society. We lost one by removal during the year, but gained a new member. Five meetings were held, with scientific and business programs. The county complied fully with the work of the medical preparedness committee and is ready to do its part in the national emergency.

J. H. Sams, Deputy Councilor

### Third Councilor District

The third district has a fine record in membership, and also in the various activities for the year 1940-1941. I have called on most of the county societies during the year; we also had a joint meeting with the Fourth District at Sioux City in November which most of the State Society officials, including President F. P. McNamara, attended.

The following deputy councilor reports will give a fair conception of what organized medicine is doing in the third district.

F. P. Winkler, Councilor

Clay County. During the year 1940 the Clay County Medical Society cooperated in the following public health programs: (1) conducted free school examinations; (2) made physical examinations of Clay County 4-H Club girls and boys; (3) vaccinated approximately 200 grade pupils against smallpox, and immunized 260 against diphtheria; (4) cooperated with the State Department of Health in a tuberculosis case-finding program; and, (5) cooperated in the cancer educational program of the Women's Field Army. Clay county does not have an interprofessional group.

J. M. Sokol, Deputy Councilor

Dickinson County. We cooperated with the statewide smallpox vaccination program, and held a public health program against diphtheria in our schools. All children in our county schools that so desired were immunized. We had no child health or orthopedic service. We have an interprofessional organization that is not functioning. We did not hold any fracture or tuberculosis clinics, but we did cooperate with the Women's Field Army.

C. G. Nicholson, Deputy Councilor

Emmet County. As deputy councilor for Emmet County, I beg to submit the following report for the year 1940. There are fourteen practitioners in Emmet County who are eligible to membership in the county society and I am happy to say that all fourteen are members in good standing. We cooperated with the statewide smallpox vaccination program but I am unable to state just how many children were vaccinated. Practically every doctor in the county advocates vaccination during the first year of the child's life and this is being done con-

sistently in this county with the result that a very large percentage of the children carries a vaccination scar and there are very few left to take advantage of the state program. We have an interprofessional organization which is inactive. We have had tuberculosis programs during the year and our society has cooperated in the fracture and cancer programs. Our society has not been very active in other ways as a society, but we are one hundred per cent strong, ready and willing to cooperate in any way at any time for the benefit of the state and national organizations and for the benefit of medicine in general.

J. B. Knipe, Deputy Councilor

Lyon County. We haven't very much new to report concerning the activities of the Lyon County Medical Society last year. We still have the same arrangement with the county board of supervisors for the care of indigents according to a fee schedule agreed upon by both groups; the bills are audited monthly by a committee from the medical society assisted by the county auditor.

There were several cases of poliomyelitis in Lyon County last year, and so the American Legion sponsored a countywide drive for funds with which to buy a respirator. Our society cooperated and has accepted the custody of the respirator which was placed in the local hospital. We have obtained considerable immune serum for use in scarlet fever and measles from the health center at Le Mars, and we have found this a very valuable service.

Last fall we mourned the death of one of our pioneer physicians, Doctor S. E. Blair of Alvord, who had been made a honorary member of the society last year.

L. L. Corcoran, Deputy Councilor

O'Brien County. The O'Brien County Medical Society reports the following activities for 1940. O'Brien County cooperated with the statewide vaccination program for smallpox, followed up by examination after inoculation of school children, and in December conducted a program of diphtheria inoculation. The diphtheria inoculation was done at the schoolhouses in the county; all physicians participated. Examinations of the 4-H Club members were made at Primghar in July. Tuberculosis check-ups were made in August, and x-rays were taken at Primghar. A postgraduate medical course was held at Sheldon starting in October and ending in November. Sixteen very interesting lectures were given at this course. Fifty-two physicians were enrolled which proves that the profession of Northwest Iowa approves and enjoys the excellent work being done by the Speakers Bureau. Two regular and three special county meetings were held during the year 1940.

W. R. Brock, Deputy Councilor

Osceola County. First and foremost, Osceola County is in the one hundred per cent membership column once more.

Full cooperation was given to the Farm Bureau in examining entrants for health contests. A county-wide immunization and vaccination program was very successfully carried out. Osceola County passed



a resolution endorsing compulsory smallpox vaccination for all preschool children. More will be heard from us relative to this resolution. Our county also conducted a very successful tuberculosis case-finding program. A clinic was held at the Osceola Hospital in Sibley under the direction of Dr. C. K. McCarthy and Miss Seaman.

Some of our members attended the postgraduate course held at Sheldon during September, October and November. There were no deaths of members during the year.

Frank Reinsch, Deputy Councilor

Palo Alto County. During the year 1940 the thirteen members of the Palo Alto County Medical Society have presented a solid front in several activities. Most notable of these has been the promotion of larger hospital facilities. As a result, early during the year remodeling of the East Side School Building in Emmetsburg was begun. We now have a hospital of twenty-two beds adequate for present needs. Besides promoting enlargement of the Emmetsburg Hospital, members of the medical society have perfected a staff organization for the hospital. Diphtheria immunization programs have been carried out in several of the communities. In Mallard, Ruthven and Graettinger, smallpox vaccination was done as a part of these programs. Full cooperation has been given the Farm Bureau in examining entrants for its health contests. Also, members of the county society have examined students of the various high schools at the beginning of the school year. Indigent patients are cared for in Palo Alto County in the same manner as in previous years. When necessary, medical and hospital fees are paid according to a schedule previously arranged by the county board of supervisors and the county medical society. Being fully aware of the ever-mounting expense to the taxpayers, members of the medical society are cooperating in keeping medical and surgical costs to the minimum by limiting public medical expense to those in need of such aid, and in shortening hospital stay to the actual requirements of the case. All this is being done with due regard to the patients' welfare.

A useful project of compiling a history of medicine in Palo Alto County is being carried on by Dr. Herbert M. Huston of Ruthven. This work was undertaken during the summer and should soon be ready for publication.

Harold L. Brereton, Deputy Councilor

Pocahontas County. Two new physicians located in the county during the year, and one moved. We have two life members. Twelve meetings were held, with scientific, business and social programs. Practically one hundred per cent of the members attended the meetings, and about seventy-five per cent attended postgraduate courses, particularly one held at Humboldt.

We have a contract with the board of supervisors for the care of the indigent, based on a fee schedule. About 333 families were cared for, all of them having free choice of physician. We have a committee to audit the bills and the plan works very satisfactorily.

We did not cooperate with the statewide smallpox vaccination program because most of the people in the county are well educated on this point and see that their families are protected. We carried on a tuberculosis case-finding program giving Mantoux tests and x-ray examinations. We cooperated with the Women's Field Army in its educational program, and our interprofessional association was active at intervals.

J. H. Hovenden, Deputy Councilor

Sioux County. Four meetings were held during the year at which times programs of unusual interest were presented and the society business was transacted. The county medical society conducted a tuberculosis clinic in November in which all physicians participated. The effort covered all known cases of tuberculosis, and tests and x-ray examinations were given to seventy persons.

John G. de Bey, Deputy Councilor

#### Fourth Councilor District

Buena Vista County. We had seventeen paid members in 1940. We lost one member by death and one member joined the Medical Corps of the United States Army. We have one non-member in the county.

Public Health Program: We again cooperated in the statewide smallpox and diphtheria immunization program. This year more diphtheria immunizations were given than in 1939; over 250 diphtheria and around 200 smallpox vaccinations were administered during the period from figures available at this time. Three smaller towns and rural consolidated centers carried out programs of their own last spring. We have no definite public health program carried out by the county society. A few of the towns have a school nurse during the fall and again in the spring. One town has a full time school nurse. Buena Vista County had a tuberculosis clinic last spring, following a survey made by the visiting nurse from the state committee. It was well attended and found well worthwhile. Our society has cooperated actively in the cancer educational program. A majority of the physicians in the county have appeared before lay groups to discuss the cancer problem. A good many women were given a routine physical examination by their physician during the time set aside for this. No fracture clinic was held in our county.

The county society maintains a supply of oxygen for its oxygen tent and two resuscitators which are available to any physician in the county. The equipment was donated to the society. One resuscitator is kept at the county seat and one in the northern half of the county; the oxygen tent is kept at the fire station in Storm Lake; either is available twenty-four hours of the day. Several health talks were made by physicians in the county during the year.

Humboldt, Pocahontas and Buena Vista counties form the Tri-County Interprofessional Association. It is not active.

H. E. Farnsworth, Deputy Councilor

Carroll County. Carroll County sponsored a tuberculosis clinic which was considered successful, but it

was the only public health program conducted by the county medical society. We have no interprofessional organization.

W. L. McConkie, Deputy Councilor

**Cherokee County. Public Health Program:** Through the public school system all school children who had not previously been protected were immunized against smallpox and diphtheria. Members of our society gave their services to the indigent and were paid a set fee for the others. Practically 100 per cent of our school children are now immunized. This is an annual program and has been maintained for several years.

We have a tuberculosis committee and had one program during the year, as well as one program devoted to fractures. We have cooperated with the Women's Field Army in this county on cancer education but very little has been accomplished. To have the Women's Field Army function more direct organization work will be necessary by some centralized group in the various counties such as this one.

We have no interprofessional organization in this county, but the dental society occasionally meets with our society. The Cherokee County Medical Society meets the second Tuesday evening each month either at the Sioux Valley Hospital in Cherokee or at the Cherokee State Hospital. A scientific paper is presented, moving pictures are shown, and cases are discussed.

Chester H. Johnson, Deputy Councilor

**Crawford County.** During the last year there have been some changes in the membership in our county medical society. Two physicians moved from the county, and new men have filled their locations. Dr. E. M. Mark, secretary of the society, moved from Manilla to Denison where he has erected a modern residence and office combined. We lost one member, W. A. Garner of Kiron, by death.

We have an agreement with the relief office whereby we are allowed \$2.50 a family for each month. Our Auditing Committee goes over the bills and prorates the money into the various accounts for medical, surgical and allied services, and supplies. We take what we can get from this system but it is not satisfactory, although it is the best we have been able to procure.

We had hoped to have a new city hospital in Denison, but the proposal was voted upon unfavorably. During the last year about 540 children were vaccinated for smallpox and 650 immunized against diphtheria. The services of the county nurse helped materially in making this possible, and her services in general have been very satisfactory.

C. L. Sievers, Deputy Councilor

**Ida County.** The Ida County Medical Society cooperated with the statewide program for smallpox vaccination, and carried on its regular program of diphtheria immunization of school and preschool children. We cooperated with the Women's Field Army in its educational program, but did not have programs on fractures or tuberculosis during the year. Our interprofessional association exists but is not functioning. We were active in helping the work of the medical preparedness committee.

E. S. Parker, Deputy Councilor

**Monona County.** The Monona County Medical Society carried on an immunization program in cooperation with the statewide campaign. The schools were divided and assigned to the county physicians, and each man went directly to his schools and carried on the immunization there. Seven hundred fifty-two children were given toxoid, and 628 were vaccinated. The society also carried on a tuberculosis case-finding program, and was active in after-care of infantile paralysis victims.

E. C. Junger, Deputy Councilor

**Plymouth County.** The deputy councilor's report for Plymouth County is almost an exact replica of the report for 1939. Our plan of medical relief which has been in effect for four years, consisting of a contract with the supervisors and the fifteen physicians of the county, was again in force in 1940 and has been renewed for this year. This plan has proved very satisfactory to all concerned.

A diphtheria and smallpox immunization program was carried out with a large number of children and a few adults immunized. The work was done in the office of the family physician. A tuberculosis case-finding program was continued under the leadership of the county nurse. A summer round-up was again carried out in Le Mars with the local school nurse in charge.

Our county interprofessional association was organized in 1937 and is still active. No meeting was held in 1940. It seems difficult to arrange a program of interest to all concerned, however, if the need arises, concerted action can be secured at once from the members.

No fracture or tuberculosis programs were given by the county society as such but both subjects were presented several times to the members through the hospital staff meetings which all members attend. The county has an active organization of the Women's Field Army with which the society has cooperated. The society meetings are held the first Tuesday in each month in conjunction with the staff meetings of the Sacred Heart Hospital and are well attended.

Wendell L. Downing, Deputy Councilor

**Sac County.** The Sac County Medical Society kept up its reputation for being one of the most active of the small county societies during the year 1940. Membership includes every active practitioner in the county and the meetings are attended by about eighty per cent of the doctors. We usually have guests from surrounding counties and they are always welcome.

Our meetings have been excellent in the past year with speakers from Des Moines, Fort Dodge, Sioux City, Rochester and Omaha. Many of these talks were accompanied by pictures and it has been our custom to have a member of our own society give a short talk on any subject of interest to himself and the society. There have been eight such meetings and in addition the Twin Lakes meeting at Rockwell City.

The plan to finance these meetings has been in operation now for two years and has worked well. We charge the 4-H Clubs of the county one dollar



for each child examined for their annual health contests. Of this sum, the child pays fifty cents and the Farm Bureau the balance. The money is all paid into the Farm Bureau office and the county agent sends our secretary a check for the season's examinations. This keeps youngsters who do not have a chance in the contest from being examined free each year, and discourages the others from coming back each year with defects found in previous examinations uncorrected. Everybody seems better satisfied with the present plan. If we care to call in men from outside for the final examination, funds are available to pay at least the traveling expenses.

For years the meetings of the Sac County Medical Society have been characterized by a conviviality and fellowship which make attendance a pleasure and tend to keep the average man coming when possible. He always hears a good program which makes it worth his while.

J. R. Dewey, Deputy Councilor

#### Fifth Councilor District

Boone County. I wish to report on the activities of the Boone County Medical Society for the year 1940 as follows:

**Public Health Programs:** The society participated in the public health programs one hundred per cent. We had no public health program outside of the state program.

**Interprofessional Organization:** We organized an interprofessional group two or three years ago, but it has not functioned.

**Fractures and Tuberculosis:** Aside from the postgraduate course which operates each year, we were not active in this field.

**Cancer Program:** The society has been active and some results are being shown.

The Boone County Medical Society together with the Story County Society conducts a postgraduate course consisting of ten lectures each year. The one conducted during the year 1940 was considered very profitable by all who attended.

James O. Gano, Deputy Councilor

Calhoun County. The Calhoun County Medical Society actively supported the statewide smallpox and diphtheria immunization program; its officers served ex-officio on the county Health Council which directs the county nurse's activities; and they helped arrange countywide monthly meetings at which timely topics are presented. The county as a group examined the 4-H Club boys and girls and helped select the state health champion girl; we held preschool child health clinics; and we have placed emphasis on having lay groups devote at least one meeting a year to some health subject.

A postgraduate course was presented at Rockwell City in the spring, in cooperation with the Speakers Bureau. One meeting of this course was devoted to orthopedics, but we had no special program on tuberculosis or cancer with the exception of one lay cancer meeting. Two younger physicians have moved into the county, thus cutting down the

average age of the practitioners, and stimulating interest in general. The attendance at our meetings has also increased since a Woman's Auxiliary was formed which meets at the same time as the physicians do. On the whole, we have a fairly active society.

P. W. Van Metre, Deputy Councilor

Dallas County. Our society had a very pleasant and progressive year. We participated in the smallpox and diphtheria program and cooperated with the Farm Bureau in its health campaign, examining 4-H Club members. The adult members also presented themselves for health examinations, which we think is a very commendable innovation. An orthopedic clinic conducted by Dr. Steindler was held at the Kings Daughters' Hospital in Perry. The results of this clinic were very gratifying. An excellent refresher course was given at Panora.

E. J. Butterfield, Deputy Councilor

Greene County. The Greene County Medical Society did not have a very successful immunization program because of the fact that the osteopaths took it over. We did have an orthopedic clinic at the Greene County Hospital at which one hundred persons were examined. About ninety of them were orthopedic cases and ten per cent were combined orthopedic and pediatric. We have held no fracture or tuberculosis programs, and have not been active in cancer work. Regular monthly meetings have been held, with scientific programs presented by guest speakers. We have an active study club which acts much the same as an interprofessional association. It meets twice a month, and papers are given by local members and those from adjoining counties.

Phillips E. Lohr, Acting Deputy Councilor

Guthrie County. Regular meetings of the Dallas-Guthrie Medical Society have been held quarterly and the total membership of the Society was 44. We are operating under a medical plan of the Iowa Emergency Relief Administration. A refresher course was held in Panora and it was very well attended by the members of the society. We have no interprofessional organization. Immunization programs were carried out for diphtheria and smallpox.

Three new members were added to the society; one died and two moved from the county.

S. J. Brown, Deputy Councilor

Hamilton County. There were eighteen members of the county society at the beginning of 1940. Since that time three members have been lost, Dr. Dorsey and Dr. Wildish dying, and Dr. Thompson being called to the Army. One new member is Dr. Romine of Stanhope. Four meetings were held.

An antidiphtheritic campaign was carried out in Webster City in the spring and later in the year a countywide program was conducted.

M. B. Galloway, Deputy Councilor

Polk County. **Public Health Programs:** From experience gained in the five-year plan for immunization of children against diphtheria and the summer round-up, the Committee on Preschool Health has

cooperated in the organization of a yearround preschool health program. This program is a combination of the two campaigns extended to include all children from two to five years of age. It includes an educational program in each Parent-Teacher Association. The clinical procedure, which so often does not provide satisfactory examination or advice to the parent, is avoided. Provision has been made at the Health Center for examination and protection of children whose parents are unable to pay for private care. The statewide smallpox vaccination program is easily adaptable to our preschool health program and the publicity, emanating from the State Department of Health, is of definite value to the local program. The full value of the program in the number of children examined, the number of defects corrected and the protective treatments given cannot be fairly compared with results of campaigns in other years until the plan has been in operation for a year. Approximately twenty-five per cent of Des Moines children under five years of age have been given preventive treatment against both smallpox and diphtheria, outside of private practice. No record is available of the number of children given care by the family physician. Sixty-two and two-tenths per cent of the children entering kindergarten last fall were immunized against diphtheria and sixty-one and four-tenths per cent had been vaccinated for smallpox. Pediatric service at the Health Center was extended to provide care to children between two and five years of age. Two hundred and six children were given general physical examinations at the Health Center and ninety-nine of these returned for two hundred and seventy-nine visits during which time corrective treatment was given. One thousand, seven hundred and forty-two children under two years of age were seen in the eight well-baby clinics conducted by the Public Health Nursing Association and attended by a doctor. Three hundred and twenty-nine out-patients were seen a total of three thousand, six hundred and sixty times at Broadlawns Orthopedic Clinic. Three hundred and forty-nine orthopedic in-patients were hospitalized for a total of three thousand, five hundred and thirty-one days during the year.

**Tuberculosis:** The Society has approved tuberculin testing programs in the Des Moines Public Schools, Dowling College, St. Joseph's Academy, suburban and rural schools and the National Youth Administration group. An early diagnosis campaign was conducted this year. The society sponsors a Christmas Seal Clinic for diagnosis of referred patients unable to pay for private care and not eligible for service at the Broadlawns Hospital. Two hundred and five new cases of tuberculosis were seen in forty-nine Christmas Seal Clinics in 1940.

**Cancer Program:** Polk County does not have a cancer committee. However, the Tumor Clinic, established at Broadlawns Hospital in 1939, has rendered an exceptional service to the community. This clinic provides diagnostic service for all patients who come or are referred to it. Private patients are referred back to their own physician. County pa-

tients are cared for at Broadlawns. During the year 1940, two hundred and thirty patients were given three hundred and fifty-one visits in this clinic.

**Home Obstetric Service:** One hundred and one mothers were delivered of one hundred and three babies during the year 1940. This service was established in 1939 through the cooperation of Broadlawns Hospital and with the sponsorship of the State Department of Health, the University of Iowa College of Medicine and the Polk County Medical Society. Patients must be eligible according to hospital social service regulations.

**Venereal Disease Clinic:** Seven hundred and sixty-two patients were given thirteen thousand thirty-three visits at the Broadlawns Venereal Disease Clinic during 1940.

**Commitment Board:** Five hundred and fifty patients were examined by the Commitment Board established by the society upon appointment by county officials for medical examination of patients seeking commitment to Iowa City. Of this number three hundred and sixty-two were charged to Polk County's quota of five hundred and five. Many were cared for locally because of adequate facilities and benefit of immediate service.

**Medicodental Bureau:** This Bureau, operated by the society for the purpose of extending credit without interest to eligible people employed at a low income, gave service to one hundred and fourteen patients in 1940 and collected for the hospitals a total of approximately \$4,350.00, for the doctors more than \$3,500.00 and for the dentists about \$50.00.

**Medical Business Bureau:** This Bureau, offering to the profession the services of ten full-time employees, collected more than \$37,000.00 for the local doctors in 1940.

**Hospital Service, Inc., of Iowa:** More than 6,000 Polk County residents have enrolled in the Blue Cross Plan. Of this number one hundred and fifty-two are in the Polk County Medical Society group.

Approximately seventy-five members of the society provide the Broadlawns County Hospital with a visiting staff. The county physician plan of providing medical care to the indigent in their homes is unchanged. The executive office of the society continues to operate as a coordinating center of medical activities in the county.

James A. Downing, Deputy Councilor

**Story County.** I submit the following report of Story County for 1940. Immunization among school children was carried out, both in town and rural communities, the same as for years. I believe each doctor put forth a special effort among his patrons to get all to comply. We have no active interprofessional organization.

Boone-Story Societies continued their joint meetings, having nine postgraduate course lectures for the year; July 19 we had a special meeting of the two societies, at the Ames Country Club; Earl Bush, our incoming president was the guest of honor.

Our 1940 contract for the care of the indigent was continued for 1941 by agreement with the board of supervisors.

Bush Houston, Deputy Councilor



Webster County. The county smallpox vaccination and immunization program was not as extensive in scale as in 1939. Our society is cooperating with the Webster County chapter of the Infantile Paralysis Foundation to secure equipment and necessary care for the long period of treatment required in cases of the disease.

Medical Relief Set-up: The Webster County Medical Relief Clinic sponsored by our county society has completed its first year of operation with Dr. L. L. Leighton as director for 1940. Generally speaking it has been a very satisfactory arrangement for relief patients and has provided for their medical needs. The county board of supervisors and the county medical society apparently were also satisfied, because a new contract with slight modifications was signed for 1941.

Our interprofessional organization was given a sample of the great benefits to be derived by joint meetings at the November convention of the North Central District Veterinarians held in Fort Dodge. To these meetings the members of our county medical society were invited to hear papers on Bang's disease and their discussions. These papers were timely and highly instructive to the men of the medical profession because of the frequency of infection of this disease in human beings. All medical men who took time to attend the consideration of Bang's disease were anxious for similar meetings.

The year 1940 marked the retirement from active practice of Doctors W. W. Bowen, W. F. Carver, and Allie Hoyt Wakeman. For many years they have been loyal members of the Webster County Medical Society.

H. E. Nelson, Deputy Councilor

#### Sixth Councilor District

*"Be Careful and Don't Get Caught With Your Battery Down"* is the theme of an advertisement in large red letters, placed before a progressive local filling station. A similar warning should be stamped on the minds of the majority of the medical profession in regard to their interest in the activities of the Council, the House of Delegates and their committees. Professional "batteries" are entirely too low in such activities as supervision of public health programs, interprofessional organizations, activities in medical preparedness, cancer programs, fracture programs, immunization programs, tuberculosis eradication, and the many other health activities undertaken by an efficient state medical organization. *Keep your professional batteries up.*

I wish to thank the deputy councilors for the following reports.

C. W. Ellyson, Councilor

Benton County. The Benton County Medical Society cooperated with the statewide immunization program. Approximately 300 children were cared for in this campaign.

Nathan B. Williams, Deputy Councilor

Black Hawk County. We have in Black Hawk county a very active county medical society, and if

there are a few things it hasn't done, it is because there has seemed to be no occasion. While we do not have a public health program in Waterloo, we did cooperate with the statewide program of immunization, giving 925 vaccinations against smallpox, and 475 for diphtheria in Waterloo alone. We were unfortunate last fall in having an epidemic of infantile paralysis. The medical profession organized to check the spread of the disease insofar as possible, gave courses of instruction in the special care necessary for these victims, and worked with a special representative of the College of Medicine of the University.

We have an interprofessional organization which in its beginning was very active, but on the death of its enthusiastic president, Dr. Brinkman, the organization became dormant. It has recently been resuscitated and in February we expect to have a meeting of that organization in conjunction with our county society.

The county society is organized to help the Women's Field Army in its program in the spring. It is also organized for the medical preparedness work, and that phase of the activity is functioning one hundred per cent. The county society voted to pay the dues for the physicians called to service.

A. J. Joynt, Deputy Councilor

Grundy County. Grundy county has a very small medical society which is not very active. However, we did cooperate in the statewide smallpox vaccination program, but because of the fact that we had given three hundred vaccinations in the schools, we had little response from the statewide program. We also cooperated with the Women's Field Army in its educational program against cancer.

W. O. McDowell, Deputy Councilor

Hardin County. The Hardin County Medical Society has completed the year 1940 with the loss of only one member by death, Dr. J. R. Winnett of Eldora. All eligible physicians in the county are members of the society. Our contract with the board of supervisors has been renewed for the coming year at the same figure as for last year. We have had meetings with scientific programs every month except at the annual business meeting. We did not cooperate with the smallpox program in 1940 because we had such a poor response in 1939. Iowa Falls put on a diphtheria immunization program in cooperation with the school board shortly after school started in the fall. A countywide tuberculosis survey was carried on in the fall in cooperation with the Iowa Tuberculosis Association with a very nice response. We do not have an interprofessional organization, but we have attended meetings with the county dental society and have invited them to some of ours. We have a cancer chairman who is cooperating with the Women's Field Army.

F. N. Cole, Deputy Councilor

Iowa County. The Iowa County Medical Society holds about three meetings each year, due to the fact that practically all of the members attend the Linn county meetings. We did not cooperate in the im-

munization program because we could not get the cooperation of the other county organizations, but we have covered the county fairly well in programs of our own carried on before the time of the statewide program. We were active in tuberculosis work, giving tuberculin tests to school children in the Amana colonies, North English and Williamsburg. We also helped with the cancer educational work.

Irvin J. Sinn, Deputy Councilor

Jasper County. The Jasper County Medical Society has held its regular monthly meetings at the Skiff Memorial Hospital in Newton following a sixty-three dinner. In accord with its custom for the last several years, the society has entered into a contract with the board of supervisors for the care of the county indigents. This contract is based, with a few exceptions, upon a fifty per cent reduction from the regular state fee bill. This contract contains a unique feature which we believe may be of interest to other societies. In the past, the negotiation of this contract has always taken considerable time, to the detriment of our planned scientific programs which have been forced of necessity into the background during consideration of each new contract. Consequently, both the society and the board felt it would be advisable to enter, if possible, into a longer term contract. The code of Iowa, however, does not permit the board of supervisors to enter into such a contract for a longer period than one year. We have overcome this difficulty in the following manner: Our new contract provides that it is to expire in one year. If neither the board of supervisors, nor the Jasper County Medical Society serves a written notice upon the other party previous to the thirty days preceding the contract expiration date, a new contract automatically comes into existence upon the same terms as the old contract. Thus, we have a document the legality of which will extend until 1945, providing both parties are satisfied; and which either party can render null and void, any year, by written notice.

We have an interprofessional organization with its own elected officers, holding its own regular meetings and discussions.

The Jasper County Medical Society has entered into elaborate tuberculosis, smallpox and diphtheria programs, and has endeavored to protect all school children in this vicinity from these diseases.

Harry P. Engle, Deputy Councilor

Marshall County. During 1940 the Marshall County Medical Society held nine meetings. The average attendance at these meetings was forty-two. A membership of 100 per cent has continued throughout the past year. Sufficient funds derived from the care of the indigent during 1940 were set aside for the payment of the running expenses of the society and the dues, both state and national, of all our members. In this connection it is interesting to note that no member of the Marshall County Medical Society has ever been delinquent in his state society or in his fellowship in the American Medical Association since 1923. This financial arrangement has continued

for eighteen years and has contributed much to the high standing of our society.

Nine guest speakers came to Marshall county in 1940. Of this number three were from the University of Iowa, two from Chicago, two from St. Louis, one from the Mayo clinic and one from the University of Michigan. Their contributions were excellent and greatly appreciated by our members. The presentations of Doctors P. C. Jeans and John Randall were outstanding in one respect, they elicited discussion. No higher tribute than this can be paid to any speaker before a county medical society.

The Marshall County Medical Society has cooperated in the cancer program and with the Iowa Tuberculosis Association and the State Department of Health in the early detection of tuberculosis. Very recently Marshall county has been combed a second time in two years for the hidden tuberculous patient. We are not so proud about our smallpox record. Individual doctors over the county have been alert to this situation and have gone far in an effort to carry out a vaccination program in their respective localities, but so far as the society as a whole is concerned nothing has been done. Marshall county has never had an enviable reputation in this problem of smallpox. Compared with the record of some thirteen million population in and around the metropolitan area of New York where not one case of smallpox has been reported, the morbidity record from smallpox in Marshall county with a population of only 35,000 has been dark indeed. Just where the trouble lies we do not know. Can anyone tell us?

A. D. Woods, Deputy Councilor

Poweshiek County. Poweshiek county carried on little more than routine procedures during the year 1940. Membership was 100 per cent. Five regular meetings were held and a postgraduate course of four lectures was given in October. An immunization program was staged belatedly in November but the response was not good. The society had no public health program and took no part in campaigns against cancer and tuberculosis. Our interprofessional organization is inactive. The society continues its welfare plan with the board of supervisors which is working satisfactorily.

Clinton E. Harris, Deputy Councilor

Tama County. The Tama County Medical Society vaccinated over 1,110 children in the statewide program, aided by the county nursing association. These two organizations work together on all health projects. We did not do much work on fractures although our county chairman attended the state fracture clinic, but we were very active in tuberculosis work, aided by the county nurse. One hundred fifty persons were given x-ray examinations. The county is organized to help with the cancer program. Although we have no interprofessional organization, we are making plans to form one.

Our contract with the county board of supervisors for relief work is fairly satisfactory. The society receives \$5,800 each year in quarterly payments,



for which we provide general medical work and minor surgery, with ordinary medicines. The contract for 1941 is the same as for 1940.

The society has twenty-four members, twenty of whom are in active practice. Its membership record is 100 per cent, with dues paid by the society from a percentage of the funds allocated from relief bills. Meetings were held regularly during February, April, June, September, November and December, with a special meeting in January. The programs were of high caliber, and most of the members attended the meetings.

A. A. Pace, Deputy Councilor

#### Seventh Councilor District

The reports from the deputy councilors of the seventh district indicate that there has been a very good interest in the scientific aspect of medicine. There has been a healthy growth in all county societies and in most cases the care of indigents has been placed on a contract or fee basis that has been satisfactory to both the county society and the board of supervisors. There seems to be a lack of general interest in interprofessional work and some of the county societies have not shown the interest it was hoped they would in the tuberculosis and cancer programs. The immunization programs have been very well carried out in the seventh district. All of the counties have done their part in medical preparedness.

I wish to take this opportunity to thank the county officers and the deputy councilors for their help and cooperation.

H. A. Householder, Councilor

Buchanan County. The annual report of the Buchanan County Medical Society follows. As usual we had our diphtheria immunization program. Exact figures are not available, but 90 per cent of the Independence school children have been immunized. As yet we have not had our smallpox vaccination program because of a measles epidemic with many children absent from school.

We do not have an interprofessional organization. The cancer program so far has not progressed to any extent. We held a tuberculosis program during the year. The American Legion posts in the county sponsored a campaign to raise funds for the purchase of an "iron lung" which has been placed in the Peoples' Hospital.

Our contract with the board of supervisors for care of the indigent has not yet been signed, but we expect it to be the same as last year.

C. W. Tidball, Deputy Councilor

Cedar County. Cedar County has no interprofessional organization, but there is a very friendly relationship at all times and occasions between the various professions. We held no public health programs, and did not do any special work in tuberculosis, fractures or cancer control.

We have adopted a fee schedule for our medical care of the indigent, and it has been accepted by the

board of supervisors. We think this will be a great advantage to both groups in carrying on the service.

E. J. Van Metre, Deputy Councilor

Clinton County. We cooperated in the smallpox vaccination program, but exact figures as to the number of children vaccinated are not available. The same program had been given the previous year, and the one this year reached a smaller number. Most of the children in the county, and all of the Clinton children were immunized against diphtheria. We gave Mantoux tests to 1,600 school children, and plan to continue with another test in the spring of 1941. We did not have any child health or orthopedic clinic during the year. The tuberculosis committee of the county works in close cooperation with the visiting nurses. The cancer education program was not as active as it was in 1939, when we had many meetings. The interprofessional organization is in a dormant state.

We still have no contract with the board of supervisors for care of the indigent. Reports indicate that it is costing the county several thousand dollars more to carry on its present program than it would if the Clinton County Medical Society had been given the contract. The county has had to pay the University Hospital between five and six thousand dollars extra for patients in excess of the quota, and one thousand dollars more to Clinton doctors than under the previous contract.

The medical preparedness committee is functioning smoothly, as is the other society work. We did not hold a refresher course but we had three or four scientific meetings. Many of our members attend scientific meetings in the Tri-Cities and Cedar Rapids.

Ralph F. Luse, Deputy Councilor

Dubuque County. I am very pleased to report that the Dubuque County Medical Society has been an active organization during the past year. An agreement was entered into between the Dubuque County Medical Society and the board of supervisors for the vaccination against smallpox and immunization against diphtheria of all children in relief families. An active campaign was also carried on to educate the public in favor of vaccination of all other children. The contract with the county supervisors for the care of the poor was carried on in the same efficient manner and with the same good results as previously. As the work is being done now it would appear to be quite satisfactory to the patients, to the individual physicians and to the county supervisors.

The society has given the fullest cooperation in the cancer educational program of the Women's Field Army. The local interprofessional organization has been functioning during the past year. Two orthopedic clinics were held, one at Finley Hospital and one at Mercy Hospital, at which more than 300 children were seen by several specialists. The fracture committee has been active. One meeting of the society was devoted to fractures. The tuberculosis committee has also been active. One dinner meeting was held at Sunny Crest Sanatorium with a

complete program on tuberculosis following the dinner. Excellent cooperation has been given by the individual physicians in the case-finding program carried on locally.

Full cooperation has been rendered by both the society and its individual members to the national defense program. All physicians have responded promptly when requested to give their services.

One can say that the past year has been a successful year for the Dubuque County Medical Society.

J. Carl Painter, Deputy Councilor

Jackson County. The Jackson County Medical Society had four meetings in 1940, consisting of programs and entertainment. There were no immunization programs. One new member was received, and one was lost because of moving to another location.

George C. Ryan, Deputy Councilor

Johnson County. The following quoted report on the activity and growth of the society has been furnished by its efficient secretary, Dr. Robert J. Prentiss:

"Nine meetings were held during the year, eight of which included a scientific program. Four of the latter were presented by out-of-town speakers. The annual picnic was held at the home of Dr. and Mrs. George C. Albright. In May Mr. Neff entertained the society in the University Hospital, and in November Dr. John H. Peck and the State Board of Control were hosts at Oakdale. The average attendance of the year was 115, while the highest was 158 and the lowest 85 members.

"Of the active and associate members in residence throughout the year, there were 11 who attended all of the meetings; 22 who attended all but one of the meetings, 12 who attended none of the meetings, and seven who attended only one of the meetings. The society has lost four active members by transfer and four by resignation; one affiliate member by removal; 18 junior members by removal, one by resignation and 16 by transfer to active membership. The society has admitted 31 active, 10 affiliate, and 45 junior members. Our membership record is as follows:

	1940	1939
Life members .....	2	2
Active or associate.....	128	121
Non-resident .....	34	21
Affiliate .....	12	3
Junior .....	87	77
Unclassified .....		5
Total .....	263	229

"This concludes the summary of the membership record of the Johnson County Medical Society."

The society cooperated in a smallpox vaccination and diphtheria immunization program, in which a large number of children were given protection. The November meeting of the society was devoted to tuberculosis, but no special program was held on fractures. We cooperated in the cancer educational program of the Women's Field Army. Our interprofessional organization has not been active.

During the past year the contract with the board

of supervisors for care of indigent persons has been based on a flat rate for each case (family). This has been very satisfactory both to the board of supervisors and the physicians.

George C. Albright, Deputy Councilor

Jones County. We cooperate in all health programs and each year through the cooperation of the Parent-Teachers Association offer a free tonsil clinic to those of the underprivileged class. We have no interprofessional organization in our county.

Our society cooperated and worked with the Women's Field Army in the cancer program and at the present time is active in the tuberculosis clinic which will be held shortly. Because of the high caliber scientific programs given by the Linn County Medical Society to which we are in close proximity we hold only one regular county medical meeting yearly for the election of officers.

T. M. Redmond, Deputy Councilor

Linn County. The Linn County Medical Society maintained its high standard of scientific meetings during the year 1940. Nine guest speakers presented papers of exceptional interest to the members and physicians from adjoining counties.

The medical relief set-up for 1940 was continued under the directorship of Dr. H. M. Ivins without any important change. The arrangement has been mutually satisfactory to the county authorities and the medical society. The society participated in the statewide program of immunization against smallpox and diphtheria. In November and December, nine thousand individuals were immunized against one or both diseases.

Late in the year, a Tumor Clinic was organized; it is supported partly by county funds and partly by funds received from the State Department of Health. The clinic is staffed by a committee elected by the society, consisting of a pathologist, surgeon, radiologist, internist and the Director of Medical Relief, ex-officio. It is still too early to reach any conclusion as to the value of this clinic. There are three well baby clinics conducted by the Public Health Nursing Bureau in addition to the regular pediatric clinics which are part of the medical relief program.

The society supported the Women's Field Army in its cancer educational program by providing speakers for public programs. The society sanctioned the employment of two county school nurses during the year. The nurses are compensated jointly by the state, county and the county Red Cross. The tuberculosis committee has continued its follow-up and case-finding activities during the year.

By the end of the year, nine members of the society had received orders to report for active duty in the military service. One member was lost by death.

B. F. Wolverton, Deputy Councilor

#### Eighth Councilor District

In submitting the reports from the deputy councilors I wish to add briefly that all of the societies have been active during the year, meetings have been



regular, attendance good, and interest good. Van Buren County by reason of its small membership, of seven active practitioners, finds it very difficult to have regular meetings, but this society does excellent work in the care of the indigent and is receiving a fair fee for this work. My information is that all of the counties in this district have good financial arrangements with the boards of supervisors for the care of the indigent.

The establishment of a large government plant between Burlington and Fort Madison will add greatly to the responsibility of the physicians in this area. Not only the population but the hazards of illness will be greatly increased. Tuberculosis and typhoid fever will appear if the doctors do not receive complete cooperation from governing bodies.

No postgraduate courses were conducted during the year in this district but several of the societies had capable speakers at most of their meetings. The secretary of the State Society informs me that 96 per cent of the eligible physicians in this district are members. Altogether the year has shown some advance in the attack on medical problems.

C. A. Boice, Councilor

Des Moines County. The immunization and vaccination program was not carried on this year because of some opposition on the part of the society. The county has an interprofessional organization but I would say that it is in a state of coma. The county medical society approved a tuberculosis case-finding program to be carried out by the county health unit with the cooperation of the society. Thirteen hundred tuberculin tests were made during the year and one hundred sixty-seven positive reactors, contacts and cases were given x-ray examinations.

The society approved a heart survey to be made among school children in Des Moines County. The society also approved the cancer program of the Women's Field Army, and some educational work has been carried out as a result.

Des Moines County has a complete, generalized public health service which operates with the cooperation of the Des Moines County Medical Society.

Erwin C. Sage, Acting Deputy Councilor

Henry County. Henry County Medical Society held nine meetings during 1940. All were well attended. The society strives to have its programs presented by its own members as far as possible.

We have cooperated in full with the immunization program of the State Society. We have a very satisfactory contract with the county board of supervisors for care of indigent cases.

All but one of the eligible physicians in the county were members in good standing of the county society.

S. W. Huston, Deputy Councilor

Jefferson County. The Jefferson County Medical Society consists of sixteen members, including one life member and one member not in practice. One member moved from the county and there have been no gains nor deaths in the past year.

We meet once a month and have very profitable

programs. In addition, practically the same group meets once a month as the Jefferson County Hospital Staff. Here we discuss the interesting cases in the hospital and the indigent work for the month. For years we have had the same program for the care of our indigent. It has been very satisfactory to our society as well as to the board of supervisors.

Our society has cooperated with the State Society in the fracture, tuberculosis and cancer programs. Some of our members have appeared before lay groups.

Ira N. Crow, Deputy Councilor

Upper Lee County. We cooperated in the statewide immunization program, vaccinating one hundred children against smallpox and immunizing fifty against diphtheria. Examinations were given to all children entering school. Arrangements are now almost completed for making a tuberculosis case-finding survey among local Mexicans. We cooperated in the cancer educational program, but have had no fracture or tuberculosis programs. Our interprofessional organization is inactive.

R. L. Feightner, Deputy Councilor

Lower Lee County. We cooperated in the statewide smallpox campaign, vaccinating approximately two hundred children. We also conducted a tuberculosis clinic in which five hundred students were tested and all positive cases investigated. We have had no child health or orthopedic clinics. Our hospitals conduct monthly staff meetings at which time we consider the health problems of the community. We cooperated in the cancer educational program of the Women's Field Army.

G. H. Ashline, Deputy Councilor

Louisa County. The following is a report of the activities of our county society for the year 1940. Our county is supposed to hold regular monthly meetings, but two were missed during the year, for various reasons. Our society cooperated with the statewide immunization program. I cannot give the number of children treated, but all that were willing, were immunized, whether able to pay for it or not. The county is a little less than 100 per cent protected against smallpox and diphtheria.

We do not have an interprofessional organization. We tried to form one but could not hold the dentists, pharmacists or veterinarians. We have no nurses in the county who are active.

We appointed a fracture committee but it did not function. We cooperated with the State Department of Health in a campaign to detect early tuberculosis, I think with some success. Some persons were detected who would not have consulted a physician without the drive. We appointed a committee to cooperate with the Women's Field Army but it did not function.

J. H. Chittum, Deputy Councilor

Muscatine County. We cooperated in the statewide immunization program. The number of children immunized for diphtheria was 458, the number for smallpox was 289. There were 125 Schick tests for diphtheria made. Some of these children were

inoculated for both smallpox and diphtheria. Altogether there were 781 children inoculated, and in addition there were 95 adults inoculated for smallpox in our health program the past year. We had four blood donors for infantile paralysis, each giving a half pint of convalescent blood and one adult gave one pint of blood for scarlet fever.

We did not have any special child health or orthopedic clinics. We do not have an interprofessional organization in Muscatine County. We do not have any special fracture or tuberculosis committees, but there has been quite a little tubercular testing done, and I think the tuberculosis problem is being attacked. We have a record of twenty-four thorough physical and chest examinations, including x-ray films of the chest of each case for incipient tuberculosis.

Our Society has not cooperated very satisfactorily in the cancer educational program.

T. F. Beveridge, Deputy Councilor

Scott County. The highlight of 1940 for the Scott County Medical Society was the acceptance by the Iowa State Medical Society of the invitation to hold its 1941 meeting in Davenport. Preparation for this event has been uppermost in the minds of the membership during the concluding months of 1940. Arrangements have been made under the direction of the general chairman, Dr. George Braunlich, to give the visiting members an even more profitable and enjoyable meeting than the one held in Davenport in 1935.

Further activities of interest were the various health programs. The society voted not to take part in the annual statewide immunization program but to carry on a continuous campaign through its individual members. This constitutes the urging of parents to have their children immunized and vaccinated, the keeping of accurate records of the number of vaccinations and immunizations and the compiling of an annual composite report. The Committee on Child Health under the able leadership of Dr. Carl Matthey was active. Dr. Howard Weis as director of the Maternal Welfare Committee conducted weekly clinics, in conjunction with the Visiting Nurses Association. The Committee on Tuberculosis secured an excellent speaker in Dr. J. Carl Painter of Dubuque for the meeting in September which was set aside for that subject. Dr. Frank Peterson, Professor of Surgery, University of Iowa, was the principal speaker at the October meeting which was devoted to fractures.

The medical care of the ever-present indigent was carried on under contract with the county supervisors. The contract made in May 1939 was renewed in 1940 with a raise in the basic rate from \$2.00 to \$2.50 per case load per month. Such extras as hospital bills, drugs, glasses, venereal clinic salaries, and services in county institutions were paid for over and above this rate. All told, medical and dental care cost the county \$47,197.12 of which \$34,034.00 went to various physicians.

Representatives of the Women's Field Army for

Cancer Education appeared before a committee composed chiefly of wives of members with an appeal to start a branch in the community. The committee reported adversely.

The national preparedness campaign has been of interest to every member of the society. Several of the younger physicians have already been called to active duty as members of the Army Reserve Corps. The society, after carefully considering the instructions received from the chairman of the State Committee on Medical Preparedness, relieved their local committee of the responsibility of making a list of its membership. It was deemed that:

1. The questionnaires filled out by the individual physicians supplied the bulk of the information required.

2. No compulsion should or could be brought to bear on individuals to fill out a questionnaire or answer personal questions.

3. No committee of the society should assume the responsibility of judging the value of their fellow practitioners to the community or decide who should sacrifice his business to engage in the belated training for a defense program.

Various hospital insurance plans were investigated and considered during the year with the final selection of the Blue Cross Plan, Hospital Service, Incorporated of Iowa.

It might be of interest to other societies in the state to know that a change was effected in the by-laws of this county whereby a new member is not accepted into full membership until after a second favorable vote has been taken at the end of a probationary year. A probationary member not receiving such a vote within eighteen months of his original entrance to the society is automatically dropped from the roll.

May we remind you again that you are cordially invited to be our guests at the coming state meeting.

L. A. Block, Deputy Councilor

Van Buren County. The society did not have any public health programs in the year 1940, nor do we have any interprofessional organization. We did have a tuberculosis clinic. About sixty or seventy persons were skin tested and some ten or twelve given x-ray examinations. The society is cooperating very well, I think, in the cancer educational program. The society only met twice last year, once to hold a dinner for Dr. Woods of Birmingham who has been in practice for fifty years, and again for the election of officers. There are only a few of us in this county but we hope to have a better year in 1941.

L. A. Coffin, Deputy Councilor

Washington County. The society had nine regular meetings during the year, plus one dinner meeting. All of the regular meetings were postgraduate in nature, with a speaker from the University medical school. The society was again 100 per cent in membership, as it has been for many years.

We have had a contract with the board of supervisors for ten years which continues to be entirely satisfactory to all concerned. The members of the



society work closely with the health and maternity units, taking an active part in all health work. The health unit director and the county superintendent of schools have shown health films covering pneumonia, syphilis, safety, and others of that type to every school in the county which has electricity. Several other groups and clubs have also seen these films. The reporting of births is at least 99 per cent complete. The society endorsed the establishment of a single registrar of vital statistics, this being the second county in the state to have such a plan. The society took an active part in conducting immunization and vaccination campaigns. Fifty-three and two-tenths per cent of the school children in the county are vaccinated against smallpox and 60.5 per cent are immunized against diphtheria. Ninety-five per cent of all the births in the county were attended by a graduate nurse and 94 per cent of the expectant mothers reported to a doctor before the eighth month. A pneumonia typing station is provided at the hospital and has proved of great value to the doctors. Extensive blood examinations for syphilis, about three thousand in all, have been made with less than one per cent positive reactions.

More than 177 chest x-rays for tuberculosis were made during the year, six active centers of tuberculous infection being located. A cardiac survey has been made of school children. There were only four infant deaths in the county during the year, making a rate of 10.3 per 1000, which is about one-third of the rate for the state as a whole. There were only ten deaths in persons under twenty-five years of age. One death in six of those above forty-five was due to cancer. There has not been a case of diphtheria in the county since 1929 and only one typhoid case which was imported. The society records a very successful year.

E. E. Stutsman, Deputy Councilor

#### Ninth Councilor District

Appanoose. The Appanoose County Medical Society held four meetings during the year. We cooperated with the statewide immunization program, in which 125 children were given protection. We had a follow-up campaign on our previous tuberculosis work, checking each positive reactor, and were active in cancer education work.

C. S. Hickman, Deputy Councilor

Davis County. Davis County was again 100 per cent in membership in 1940. We held a number of meetings, and in the statewide program, we immunized 300 children. We also helped in the cancer program. We plan to hold monthly dinner meetings in 1941 to which our wives will be invited.

H. C. Young, Deputy Councilor

Keokuk County. For the past year the Keokuk County Medical Society has been experimenting with a new plan for medical care of the indigent. The head of the family applies to the Social Welfare office for an authorization to obtain the services of the physician of his choice. The welfare office may con-

fer with the physician about the necessity of medical service. At night or in an emergency, the physician renders the necessary service and receives his authorization the following day, and an authorization for further service is considered at that time. The fees agreed upon by the county society and the board of supervisors are not worth mentioning, but the medical society is glad to get away from the former tyrannous plan in which a county physician was hired, and feels it is a step in the right direction. The board approves of the new plan, and naturally, the patients and the physicians prefer it.

C. L. Heald, Deputy Councilor

Lucas County. Lucas County cooperated with the statewide program of immunization, but it had no local public health program. We have no interprofessional association, and did not have a fracture or tuberculosis program. The cancer program in the county has not been active because no county chairman has been appointed. We held a refresher course last fall which men from surrounding counties attended. The county society meetings were attended by almost 100 per cent of the members. Business and scientific programs were given, followed by scientific motion pictures.

S. Lazear Throckmorton, Deputy Councilor

Marion County. Our county has gained two members during the year. Our society is participating in the same medical relief plan as in previous years, and we are entering our second year of a contract for medical care of FSA clients. We cooperated in presenting a postgraduate course with Lucas, Wayne and Monroe counties, and this was well attended.

E. C. McClure, Deputy Councilor

Monroe County. Monroe County Medical Society has a membership of nine physicians who are in active practice. Meetings which are well attended are held every three months. We sponsored the smallpox and diphtheria program, and cooperated in the case-finding program of the Iowa Tuberculosis Association. We are taking care of the indigent under the old IERA plan and are also caring for the FSA clients. Thirty-five per cent of the people in the county are getting some form of relief. Our Woman's Auxiliary is active.

T. A. Moran, Deputy Councilor

#### Tenth Councilor District

A correlation of the reports of the counties comprising the tenth district indicates that the routine yearly duties such as various examinations, prophylactic inoculations, etc., have been the major activities carried on by the various county societies. Very little in the way of postgraduate work has been done. Cooperation with the national defense program has been assured in all counties.

James G. Macrae, Councilor

Adair County. Adair County has maintained its usual activity with respect to county meetings, having held both educational and business programs on several occasions. We again sponsored a county-

wide tuberculosis program, which for the second successive year has proved to be very helpful to the public. The Women's Field Army has not been very active in the cancer program, but did do some work in the county. Its activity seemed to be restricted largely because it was hard to get leaders to carry on an active campaign. Two public health programs were given by individual doctors in the county at the request of Parent-Teachers organizations. A Woman's Auxiliary has been organized for the county and should be functioning adequately during the coming year. An interprofessional organization was formed two years ago but has not been active. No reason can be assigned for this inactivity, because individually the various members all seem favorably impressed with the opportunity offered through this medium.

A. S. Bowers, Deputy Councilor

Adams County. Following is a report of the activities of the Adams County Medical Society for 1940: This society has cooperated with the statewide smallpox vaccination program. We do not have a public health program of our own. There were no child health or orthopedic clinics held. We do not have an interprofessional organization. We have no fracture committee but we held a clinic for tuberculosis January 8, 1941. We do not participate in the cancer program. There are no other activities in which the society participated during the year.

W. F. Amdor, Deputy Councilor

Clarke County. Following is a report of the activities of the Clarke County Medical Society for 1940: This society has cooperated in every way with the statewide smallpox vaccination program during the past year and I feel that our percentage of immunizations compares favorably with those of the rest of the state. We have no functioning interprofessional organization nor do we have a committee on fractures or tuberculosis. We have cooperated fully with the cancer educational program of the Women's Field Army and feel that a great deal of useful information has been disseminated among lay people. Recently this society has purchased a motion picture projecting apparatus with which we expect to show medical motion pictures at each monthly medical meeting for the benefit of our own and surrounding society members.

H. E. Stroy, Deputy Councilor

Decatur County. The Decatur County Medical Society has had an especially active year cooperating with the state smallpox vaccination and diphtheria immunization program. Most of the children in the county have been immunized in the past two years. In addition the society cooperated with the state tuberculosis program and a large number were given x-ray examinations. The society feels that nearly all contacts in the county have been checked carefully and the program should show results in the near future. The society has cooperated with the cancer education program of the Women's Field Army and has appointed one of its members as the chairman of the program in the county.

Each year the society in conjunction with the staff of the Decatur County Hospital has met with the supervisors of the hospital and discussed the medical program in relation to hospital organization. This has brought much closer cooperation and understanding between the two organizations and it is felt mutual benefit has been derived from these contacts.

Recently the society lost one of its members who was called for duty in the national defense program. This leaves only seven members in the county which has reduced the activities of the society somewhat, although there has been closer cooperation because of the few members in the society.

Decatur County is fortunate in having a county nurse and the society has assisted her very materially in her countywide work and in return has benefited greatly from the assistance she has given them in their county health programs.

The above about covers the year's resumé of activities and I feel in view of the fact that we have only a few members in our society we have done very well.

E. E. Gamet, Deputy Councilor

Madison County. There was not a great deal accomplished in our county during 1940. We attempted a countywide diphtheria immunization program which was quite well advertised in our county newspapers and in various clubs. Our efforts were without success, apparently because of a lack of public interest, since only one child received toxoid. No other immunizing program was attempted.

The Madison County Society sponsored a tuberculosis case-finding campaign in May in which 108 consented to examination. Of this number two cases were diagnosed as active pulmonary tuberculosis and were sent to Oakdale for treatment. As is too frequently the case, there were some who should have availed themselves of this opportunity for examination but refused the service.

The FSA plan for medical care of the group of patients just outside relief has been discussed at several of our meetings but nothing definite has been done. We still take care of our indigent patients according to the IERA plan.

We have no interprofessional organization in our county. We have meetings of our society each month during the year except July and August, with a 6:30 dinner at the Winterset Hospital followed by a scientific program. Out of town speakers furnish our program.

C. B. Hickenlooper, Deputy Councilor

Ringgold County. The Ringgold County Medical Society has functioned quite harmoniously for the past year. Meetings have been held upon call, and have been devoted for the most part to business and social affairs, rather than scientific. No outside talent has been used.

Our medical relief set-up is much the same as the IERA plan, calls being authorized by the relief office, claims presented and acted upon by the medical emergency relief committee, and allowed by the supervisors as adjusted by the committee. This



has proved fairly satisfactory both to the profession and the supervisors.

The society has lost one member by death, and one man has located in the county, but has not identified himself with the society. Our interprofessional organization, having neared completion, seems to be on dead center. In any event it does not seem possible to induce it to function.

E. J. Watson, Deputy Councilor

**Taylor County.** The following is a report of the activities of the Taylor County Medical Society for 1940: This society cooperated with the statewide smallpox vaccination program. Several hundred children were vaccinated. We do not have an interprofessional organization, nor a fracture or tuberculosis committee. We did not take part in the cancer program. Our county society did not engage in any other activity during the past year.

G. W. Rimel, Deputy Councilor

**Union County.** The following is the report for the Union County Medical Society for the year 1940: Our society cooperated with the statewide smallpox vaccination program. Altogether we vaccinated 98 for smallpox and used diphtheria toxoid for 389. We also examined 15 4-H club boys and girls and 560 high school boys and girls.

We have an interprofessional organization but it is not functioning at the present time.

The society cooperated with the state tuberculosis program in a countywide survey of tuberculosis contacts. Tuberculin tests were given and about 105 x-rays were taken. The society cooperated with the cancer education program of the Women's Field Army.

We have a luncheon and business meeting the first Wednesday in each month at the hospital at which time matters of any importance to the society are considered.

Howard G. Beatty, Deputy Councilor

**Warren County.** Following is a report of the activities of the Warren County Medical Society for 1940:

This society cooperated with the statewide smallpox vaccination program. We do not have a health program of our own. All kindergarten children received diphtheria toxoid and many were vaccinated. We do not have an interprofessional organization. We do not have a fracture committee but we had a county wide survey of tuberculosis contacts with tuberculin tests and follow-up x-ray. Our society cooperated in the cancer educational program of the Women's Field Army by showing a movie, and two or three members spoke over the radio. We conducted some public health forums for the Parent-Teachers Association in country schools.

C. H. Mitchell, Deputy Councilor

#### Eleventh Councilor District

During the year the various county societies comprising the eleventh councilor district carried on their usual activities. There was one district meet-

ing held in the fall in Council Bluffs, at which time the Medical Preparedness Committee and the Legislative Committee, together with the president of the Iowa State Medical Society, presented the program.

The following reports of the deputy councilors give an account of the activities of the various county societies.

M. C. Hennessy, Councilor

**Audubon County.** We have had our usual four meetings during the year, and then associated with Cass county for two meetings. We have 100 per cent membership in the state and county societies. Our medical relief set-up seems to be working satisfactorily on the old original plan.

L. E. Jensen, Deputy Councilor

**Cass County.** The Cass County Medical Society has been active during the past year. Each physician in the county is a member. We cooperated with the State Department of Health in smallpox vaccinations and immunizations for diphtheria, with one hundred sixty children being seen.

At the request of the committee on fractures a special program on this subject was given at one of the regular meetings. The doctors of the county cooperated in a clinic conducted by the Iowa Tuberculosis Association in the spring. A refresher course with talent supplied through the Speakers Bureau was held in Atlantic last spring. Attendance at the course was good. The Woman's Auxiliary actively entered into the educational program of the Women's Field Army in the cancer program.

R. L. Barnett, Deputy Councilor

**Fremont County.** There were no deaths in our county society during 1940, and no physicians were called to military service. We cooperated as individuals in the smallpox campaign, and carried out a tuberculosis case-finding program which was highly satisfactory to everyone concerned. The check on old cases showed a marked improvement, and the few new ones which were found were put under immediate treatment. The chairman of the Women's Field Army did a splendid job of education which reached practically every home in the county.

We had no fracture program, and do not have an interprofessional organization.

Our board of supervisors has been very liberal about medical and surgical care for border-line cases and has included them with the regular relief load. The three members of the economics committee have worked hard and have been very fair in auditing the medical, dental, surgical and hospital bills, and although it has few hard and fast rules, it has kept the charges in line and well under the established fees. The committee has made it a practice to invite the other doctors to "sit in" on each monthly meeting in order that everyone should become better acquainted with the problems and procedures, and this has been a helpful move.

Last August we had an epidemic of poliomyelitis, six cases requiring a respirator. This was the spur

for a drive to purchase a machine for the county. Most of the service clubs and the Sidney Legion post cooperated in the project.

Our outstanding activity as an organization was our second Red Cross first aid class. Our society has twelve members, and so we divided the standard course into twelve lessons, assigning each doctor one night on which to discuss his subject. He was allowed two hours for lecture or demonstrations, as he chose. This plan has engendered a splendid spirit among the doctors, and each has tried to outdo the others in the excellence of his presentation. Eighty-three men were enrolled in the class, among them men connected with the highways of the state, WPA timekeepers and foremen, filling station operators, all local firemen, but no high school coaches, although they of all men should know first aid. This program has done much to make all of the doctors in the county better friends, has given them all a countywide acquaintanceship, has given us a much improved highway first aid plan, and brought us all together for the common good. It has also placed the medical society at the top of the list medically and surgically in the county.

Ralph Lovelady, Deputy Councillor

Mills County. The medical relief set-up in Mills County remained the same as in previous years to the mutual satisfaction of the indigent patient, the board of supervisors, and to the physicians themselves. No change is anticipated. Under this plan the patient is allowed free choice of physician, and the physicians themselves realize a certain definite return for services rendered based upon an approved fee schedule. All bills are submitted monthly on forms authorized by the county director of relief, and audited as requested by the board by a committee appointed from the county medical society. We feel that this set-up will be found readily adaptable in the smaller rural counties.

County society work has been limited during the past year because of the small membership although all eligible physicians are members of the society. Many members have attended postgraduate courses in neighboring districts. One tuberculosis clinic was held in August, sponsored by the county society in conjunction with the Iowa Tuberculosis Association.

Dean W. Harman, Deputy Councillor

Montgomery County. We had no cooperative public health program except the tuberculosis case-finding survey. We conducted a smallpox program two years ago, but did not cooperate with the statewide campaign in November. We have no interprofessional organization, but feel we should have. We had one meeting devoted to fractures, and have cooperated with the Women's Field Army for the control of cancer. We had very interesting monthly meetings with one midsummer picnic and a Christmas dinner. A good general fraternal feeling prevails among the members.

W. S. Reiley, Deputy Councillor

Page County. Public Health Programs: Our vaccination program for Page County in 1940 was carried out by the individual doctors. Material was furnished by the State Department of Health. Figures are not available for the number of patients vaccinated. No clinics were held. We have no interprofessional association, and no fracture or tuberculosis committees. We did not carry on a cancer program.

Other Activities: The relief load was considerably cut for 1940. The reduction amounted to about \$8000.00 and the cut represents medical care for the most part. Our total case load average was 416 cases a month. The average total cost each month was \$316.14. The average monthly number of patients in the hospital was seven. The average monthly cost not including Iowa City was \$251.85. The average cost including Iowa City was \$297.85. (This does not include other institutional cases.) The expenses for county medical care have been the lowest since 1934. The relief set-up has been the same as in 1939.

W. H. Maloy, Deputy Councillor

Pottawattamie County. Pottawattamie County Medical Society has continued to cooperate with the Parent-Teachers Association in its program of immunization against diphtheria and has taken an active part in testing high school pupils for tuberculosis. The local interprofessional organization has reported no activities for the past year. Cooperation with the cancer educational program of the Women's Field Army has continued. Care of the indigent has again occupied much of the interest of this society. With excellent cooperation from the relief authorities we have been able to carry on the work on a definite fee schedule with little horizontal reduction. Except for minor points in operation we feel that the local set-up satisfies the needs of all emergency care of the indigent.

Jack V. Treynor, Deputy Councillor

Shelby County. Herewith is the resumé of the Shelby County Medical Society activities during 1940. Our Society began 1940 with ten members, 100 per cent of the men located in the county. One member, Dr. John Lundby, died during the year and another moved away; however, two new physicians have located in their places, and we still have ten eligible for membership. We held three meetings during the year, one of which was a demonstration of x-rays of fractures and a discussion along the line suggested by the fracture committee. Our members cooperated with the Women's Field Army for cancer education and the county's response was the best of any recent year. In a follow-up of the state campaign against tuberculosis more than 150 persons were tested and 40 chest x-rays were taken. Our members made examinations of 4-H Club members during their campaigns and attended the infant welfare meetings held in connection with the county fair.

A. L. Nielson, Deputy Councillor



Dr. Winkler: I move that the report of the Council and also the reports of the Deputy Councilors as they appear in the handbook be adopted.

*The motion was seconded, put to a vote and carried.*

The Speaker: Report of the Delegates to the American Medical Association.

#### REPORT OF DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

The House of Delegates, of the ninety-first annual session of the American Medical Association, convened in the Waldorf-Astoria Hotel on Monday morning, June 10, 1940.

The Committee on Distinguished Service Awards submitted five names to the Board of Trustees for consideration. The Board selected three of these by ballot and presented to the House: Dr. James Ewing, New York; Dr. Ludvig Hektoen, Chicago; and Dr. Chevalier Jackson, Philadelphia. After the second ballot the speaker declared Dr. Chevalier Jackson, who received a majority of the votes cast, to be elected by the House to receive the Distinguished Service Award of the American Medical Association.

An analysis of the qualities and attributes of the organization was made by Dr. H. H. Shoulders, Speaker, to determine why it was considered great. Dr. Shoulders pointed out that some may believe the greatness of the American Medical Association lies in the fact that this association has the largest membership of any medical organization in the world. Others may attribute it to the long list of scientific achievements which stand to the credit of the Medical Association. Dr. Shoulders went on to say that certainly the association was the world's largest; its contributions to medical science have been marvelous; its contributions to the betterment of human welfare have been inestimable; but these factors are the evidences of greatness and do not explain the achievement of greatness.

In the constitution of the American Medical Association is found this simple statement: "The objects of the Association are to promote the science and art of medicine and the betterment of public health". The degree to which this statement of purpose has permeated the organization and motivated its actions determines the measure of its influence in accounting for greatness. A study of the actions of the House on many occasions shows that the spirit of this statement has been ever present. This was especially true when it adopted a code of ethical principles which has promoted both the science and art of medicine and the legitimate use of scientific advancement in the field of medicine.

Dr. Rock Sleyster, President of the American Medical Association, was then presented to the House of Delegates for his address. He said that the solidarity of the society was one of the first things that impressed him in his visits to various meetings. He pointed out that some persons have tried to create the impression that the medical profession is seriously divided by the creation of small self-constituted groups and committees. In spite of

this Dr. Sleyster said he found everywhere a solidarity of the medical profession and enthusiastic loyalty to the American Medical Association. The interest in medical science and affairs shown both by the doctors and the laity was noteworthy. The president addressed many lay organizations and reported himself overwhelmed at their interest in medical matters and also in the sincerity and earnestness of purpose displayed by medical men everywhere.

One of the high points of Dr. Sleyster's address was his appeal for a paternal defense of and loyalty to the Association to be brought about by a deeper knowledge of the activities of the Association. There is, as the president pointed out, an ever-increasing danger to the primary purposes of the organization to be found in the pressure of economic and political attack. The Councils, Bureaus and publications have gone on with increasing efficiency to counteract any movement either within or without the profession. Dr. Sleyster stated that the most efficacious means of fighting the political and economic attacks on the medical profession was for the individual to become more familiar with the historical background, purposes and functions of the society.

Dr. Sleyster gave a short history of the part played by the American Medical Association in the World War. At that time the doctors offered the country services in every capacity. At the time of the Armistice 26 per cent of our members, or 38,000 doctors, were registered in active service. Once again the nation is having to prepare to defend itself from outside aggression and the president called on the House of Delegates to prepare an offer of every iota of service to the federal government.

Dr. Sleyster pointed out, however, that the Association was not without its problems. There is a definite threat to medical progress and to public health in some of the proposed legislation in Washington. The centralization of power in other countries has encroached on man's freedom of thought and opportunity of expression. The disastrous effect on health and medical progress is too well known. As the belief of the Association, the president declared the government should fight disease at its source with a proper mode of living; proper food and clothing; elimination of the hazards of the slums and tenements; proper housing, recreation and education; and protection of the people from the appalling toll of senseless and unnecessary accidents. The American Medical Association stands in defense of a historic system of freedom of science and its application for human welfare—a system which shows with pride a record unrivaled in the benefits it has brought to humanity.

In his address to the House of Delegates, Dr. Nathan Van Etten, President-Elect, re-echoed the thoughts of Dr. Sleyster in regard to the preparedness of the medical profession in the event of a national emergency. Dr. Van Etten denounced the dictatorship and totalitarianism because of their handling of medicine and medical men. A dictatorship in our own country would leave the medical pro-

fession a fate similar to that developed in Germany where the physician has been reduced to a very low place in the social scale.

With regard to Mr. Roosevelt's plan for medical service, Dr. Van Etten said he believed the building of small hospitals where they are needed is in harmony with the platform of the American Medical Association and should be supported by the doctors; however, they should not subscribe to all phases of the Wagner bill. Some physicians feel that any co-operation with the Wagner bill will lead to more construction which will absorb considerably more money than the ten millions to be appropriated for the first year. If the hospitals serve as a workshop for ordinary physicians who are taking care of the average patient, they may satisfy a real need. Building elaborate structures or attempting to maintain specialists in small places will result only in a waste of money. The ideal, according to Dr. Van Etten, would be attained when the physician directs local efforts in community health. Any community with no health program is culpably negligent and so are the physicians who permit such service failure. The President-Elect summarized his remarks in one striking sentence: "None of you can claim perfection for our system of delivering medical service, but all of you know that the American Medical Association has been working for ninety-three years to improve it, that its chief concern is better health for all our people and that nowhere on earth have better results been attained."

Some of the conditions that the medical profession may have to undergo in times of war were related to the House of Delegates by Dr. T. C. Routley, official representative of the Canadian Medical Association. Dr. Routley drew a sharp contrast to his treatment in coming to this country with what is happening in almost every other country in the world. He expressed the hope that Canada and the United States may always go on demonstrating to this world just what it means to understand man's humanity to man.

Dr. Arthur W. Booth, Chairman of the Board of Trustees, presented the report of the Board. Reporting on the Journal of the American Medical Association he said that an increasing number of articles and editorials which have appeared in it are now being reproduced in part, or are the subject of comment, in newspapers and other periodicals throughout the country. Special issues of the Journal now include numbers devoted to medical education and the work of the Council on Medical Education and Hospitals, industrial health, institutions for the treatment of tuberculosis, the annual session of the American Medical Association, and hospital registration and administration. The department of Queries and Minor Notes continues to be an important feature of the Journal. Three additional foreign correspondents were added to the Journal staff during the past year. The total circulation of the Journal as of January 1, 1940, was 99,699.

During the year the Council on Foods continued to give consideration to individual food products, but its

attention is being directed more and more to broad nutritional questions. Important official reports of the Council published during the year have dealt with the need for the addition of Vitamin B<sub>1</sub> to staple foods, the loss of Vitamin C in orange juice on standing, vitamin mixtures, claims for food products rich in certain vitamins, lead in foods, the fluorine content of foods and the fortification of foods with vitamins and minerals. Numerous decisions of the Council dealt with food products of various kinds.

The features of the educational program undertaken by the Council on Industrial Health have included the promotion of an Annual Congress on Industrial Health and the publication of a special Industrial Health Number of the Journal of the American Medical Association. Other events were the preparation of special articles on medicine in industry and on occupational diseases, the development of exhibits on industrial health, furtherance of the Council's function as a clearing house of information, and a survey of industrial medical education to serve as a basis for specific recommendations concerning expansion of adequate industrial medical teaching. The Council has continued to investigate and has attempted to interpret for the general profession the activities of lay and professional groups interested in industrial health.

An important part of the work of the Bureau of Health Education is concerned with correspondence; during the year covered by the present report more than 19,500 pieces of mail were handled. Thirty dramatized programs were broadcast over the National Broadcasting Company network during the year. This Bureau has maintained cooperative relationships with official agencies of the federal government and of state governments in all instances whenever possible, as well as with the twelve organizations of national scope.

The Bureau of Medical Economics prepared factual data which were used by the special committee of physicians of the American Medical Association at the hearings on the Wagner National Health Bill. It also prepared special material requested by the Senate subcommittee. During 1939 the Bureau prepared five new publications, completely revised one old publication and brought up to date the Index and Digest of the Official Actions of the House of Delegates. At present at least fourteen constituent medical societies have statewide arrangements for prepayment of medical care in various stages of development or operation. It is now too early to evaluate these developments in every detail. As experience is gained, it may be desirable to add to the Ten Principles adopted by the House of Delegates in 1934 for the guidance of medical societies in the organization and conduct of such activities. It has become apparent, however, that in some sections there appears to be little demand for these organized arrangements for the distribution of medical services. There are many new developments in the group hospitalization organizations which represent a further deviation from the principles adopted by the House of Dele-



gates and should be given serious consideration as a possible movement on the part of these hospitalization groups to provide their subscribers with general medical services. This is also true of commercial insurance companies. Every effort should be made to gather accurate and reliable information on this voluntary movement looking toward such improvements as experience indicates are necessary in order to maintain and advance the quality of medical and hospital services.

The Judicial Council emphasized the need for uniformity in basic organizational laws. The plan under which the one essential organization of physicians in the United States was effected is, in practically all important particulars, similar to the form of government of the United States. It was originally and is now the intent of that law that the requirements for eligibility for membership and the procedures involved in the election of members should be uniform in nature in all counties, states and territories, and that representation in our policy-making and legislative bodies should be in strict accord with established democratic principles.

In the report of The Council on Medical Education and Hospitals it is noted that from February 1, 1939, to January 31, 1940, 363 hospitals were visited as follows:

For approval of internships.....	108
For approval of residencies and fellowships.....	64
For approval of internships and residencies.....	59
For registration .....	132
Total residencies and fellowships inspected.....	436

During this period 230 hospitals were registered, 132 were closed or withdrawn from the Register, and thirty-nine were refused registration. There are 6,226 hospitals registered having a bed capacity of 4,195,026 and 58,764 bassinets; 9,879,244 admissions and an average daily census of 996,483. In addition to the visitation of hospitals, inspections were made of nineteen schools of laboratory technic.

The new officers of the American Medical Association as chosen by the House of Delegates are: Dr. Frank H. Lahey, Boston, President-Elect; Dr. Parke G. Smith, Cincinnati, Vice-President for the ensuing year; Dr. Herman L. Kretschmer, Chicago, Treasurer; Dr. Olin West, Chicago, Secretary; Dr. Harrison H. Shoulders, Nashville, Speaker of the House of Delegates.

T. F. Thornton

Dr. Thomas F. Thornton: Mr. Speaker, I move that the report of the Delegates to the American Medical Association as printed in the handbook be adopted.

*The motion was seconded, put to a vote and carried.*

## Reports of Standing Committees

The Speaker: Reports of Standing Committees of the House of Delegates are next in the order of business. Committee on Constitution and By-Laws, Dr. John Henkin, Sioux City.

Dr. Alcorn: In the absence of Dr. Henkin, I have been asked to give this report.

### REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

Your Committee on Constitution and By-Laws has been requested by some physicians to suggest a change in the by-laws in regard to the second meeting of the House of Delegates. At the present time, the second meeting is held on the last day of the session. A few persons seem to favor holding this meeting on the second day of the session, rather than the last, and in order to bring the matter before the House for discussion, your Committee asks that you vote on a change in the by-laws as follows:

Amend Chapter V, Section 3, of the by-laws so that it shall read: "The report of the Nominating Committee and the election of officers shall be the first order of business of the House of Delegates, after the reading of the minutes, on the second day of the general session."

Your Committee makes no recommendation about this change, but merely asks the opinion of the House of Delegates as to its pleasure in the matter.

John H. Henkin, Chairman  
Bush Houston  
W. L. Alcorn

The Speaker: Are you trying to amend the Constitution?

Dr. Fay: He quotes a section of the By-Laws. What section of the By-Laws was it?

Dr. Alcorn: Section 3 of Chapter V.

The Speaker: There are provisions for changing the By-Laws, and other provisions for changing the Constitution.

Dr. Fay: Then this is wrong.

The Speaker: I think it is out of order.

Dr. McClure: It should lay over for a year.

The Speaker: It would have to be presented in a different manner. We have a regular form under which it should be presented. If that is to be done, it will have to be presented and then lay over a year.

Dr. Woods: Would it not be in order to have the committee give the reasons for making this change? I think this should be open for discussion now.

Dr. Thornton: They did not make a recommendation.

Dr. Woods: They suggested that it be discussed. If they had some reason for presenting this, we would like to hear it.

The Speaker: Do we have a further report from this committee?

Dr. Alcorn: Several physicians requested this change and asked that we make this report to the House of Delegates. The committee has no recommendation to make regarding it.

The Speaker: You have no recommendation, then, as a committee?

Dr. Alcorn: No, sir.

Dr. Suchomel: Mr. Speaker, that is an amendment to the By-Laws and not to the Constitution. Consequently, final adoption could take place at the next session of this House of Delegates, which would be on Friday. I move that the change as presented in the report of the Committee on Constitution and By-Laws be adopted.

*The motion was seconded.*

A lengthy discussion ensued as to the correct parliamentary procedure in changing this section of the Constitution and By-Laws.

Dr. Winkler: I move that the motion be laid on the table until such time as the Committee on Constitution and By-Laws can make a recommendation.

*The motion was seconded, put to a vote and carried.*

The Speaker: Committee on Finance.

#### REPORT OF THE COMMITTEE ON FINANCE

The three members of the Committee on Finance met in the central office March 11, 1941, and audited the books of the State Society for 1940. It found that the financial affairs of the State Society were in excellent condition; the reserve was as stated in the treasurer's report; and the receipts and expenditures were in accord with the annual audit made by Widdup and Company. Although there are a few notes for dues unpaid, the Committee recommended discretion in pushing collection. It also commented on the equipment in the office which makes it possible for the office personnel to handle the Society work efficiently and speedily.

Ernest C. McClure, Chairman  
Hillard A. Tolliver  
Arthur S. Bowers

Dr. McClure: I move the adoption of the report as published in the handbook.

*The motion was seconded, put to a vote and carried.*

The Speaker: Committee on Medical Economics.

#### REPORT OF THE MEDICAL ECONOMICS COMMITTEE

During the past year the work of the Medical Economics Committee has been almost entirely of an advisory nature. No meetings of the committee as a whole were held. On numerous occasions, through correspondence and conferences, county societies were assisted in planning for their contracts for medical care of relief clients. Copies of contracts and advice regarding the various difficulties found in other counties have been sent out. No new collection agencies have been approved. Several have requested approval and are being observed during a period of trial to see how they live up to their agreements with the physicians for whom they are now collecting. The committee has rather routinely refused to recognize any national type of collection agency, largely because of the difficulty of maintaining any supervision over them should questions arise over their dealing with members of the Iowa State Medical Society.

The chairman of your committee represented the Iowa State Medical Society at the biennial meeting of

the Wisconsin Conference of Social Welfare in Milwaukee and presented our experiences with medical relief in Iowa.

In January plans were laid, and a study is now being started in cooperation with the Iowa State Board of Social Welfare, to determine insofar as possible the best method of handling the medical relief problem in Iowa counties. From this study we hope we can work out two or three types of medical relief plans which can be adopted, with minor variations, in any county in the state. A determination of the costs in the various counties, with a knowledge of the efficiency of the plan used, will enable both the county supervisors and the medical societies better to determine what is a fair compensation for medical care of the relief client.

Ernest E. Shaw, Chairman

Dr. Shaw: I will not make an amended report except to state that in the last paragraph of the report we speak of the study of relief plans in Iowa which is being made. Many of you men, being also secretaries and officers of your county societies, have had a letter requesting a response to our questionnaire. We have received responses from 70 counties; 29 gave no reports; six of the counties sent in reports which anybody could have made, because they said absolutely nothing. I wish you men, when you go home, would see if your county secretary has responded to the questionnaire so that we can have as near 100 per cent returns as possible. We are getting a lot of information from the answers, and I believe we will achieve something. It will take a response from about 29 more counties before we are complete. Mr. Speaker, I move the adoption of the report.

*The motion was seconded, put to a vote and carried.*

The Speaker: Next is the report of the Committee on Medical Education and Hospitals. (No response.) Medicolegal Committee.

#### REPORT OF THE MEDICOLEGAL COMMITTEE

The Medicolegal Committee wishes to report that its duties have been very light during the past year since only two members have required our defense. This, of course, does not mean that there has been any reduction in the number of malpractice suits instituted against Iowa physicians. As a committee, we wish to reassert that all of our members should be eternally vigilant lest some lack of attention or courtesy on their part may open the way for legal trouble.

F. A. Ely, Chairman

Dr. Ely: In addition to the very brief report in the handbook, I wish to say that everything is fairly quiet along the firing line, but there is always potential danger, and I always want to speak my warning. I have it from very reliable sources that some of our medicolegal trouble at the present time is arising because doctors hear half the truth from some lawyer and then talk too quickly and too much. You do not know when it will be your turn, and you know you do not always get the entire truth when you receive reports by remote control concern-



ing what another doctor has done. Therefore, as another little warning, because it may hit you next, just keep still about what the other fellow did, even if you are prejudiced against him, because he is also prejudiced against you and it may be your turn next.

Dr. Fay: I move the adoption of the report as printed in the handbook.

*The motion was seconded.*

Dr. Albright: Before this report is adopted, I wonder how many of the men have received communications from the Medical Protective Company of Fort Wayne, advising that we take out the smaller policy. As you know, they have two standard policies. One is for \$2,500 to \$7,500 and the other is for \$5,000 to \$15,000. In the premium notice I received recently (my policy expires the sixteenth of May) they enclosed a brochure entitled, "Large Limits Lost." The inference was that we should take out the smaller policies. I wrote to the company and asked whether it intended to suggest I take out the smaller policy. I received a rather long-winded but evasive letter about the matter. As you all know, the smaller policy, \$2,500 to \$7,500 limits costs \$20.00 and the \$5,000 to \$15,000 limits costs \$24.00. I am wondering what the reaction of the House of Delegates would be to a suggestion by the Medical Protective Company that the limits of our insurance be lowered.

Dr. Ely: Mr. Speaker, we went into this somewhat last year. There are some arguments pro and con with respect to the size of the policies. I have talked to Mr. Parker and have reasonably sat-

isfied myself that the carrying of too large a policy creates a plum which some of these lawyers like to pick. I believe their contention about not carrying too large a policy is a good one. However, we will be glad to correspond with them further, to the satisfaction of the House of Delegates, if that would be acceptable.

The Speaker: Are there any other remarks or comments by any of the delegates? Do you feel you would like to have this committee make a further report on that at a future date? There is a motion before the House to adopt the report of the Medicolegal Committee. All in favor signify by saying "aye". *It is so ordered.* We will now have the report of the Committee on Necrology.

Dr. Macrae: I move that the report of the Committee on Necrology be accepted as printed in the handbook, and that the assembly stand with bowed heads while the Secretary reads the names of these men.

*The motion was seconded, put to a vote and carried.*

The audience arose and stood in silent tribute while the Secretary read the names of the deceased members.

#### REPORT OF THE COMMITTEE ON NECROLOGY

Death came to forty-six of our colleagues during the year 1940. The youngest was thirty-five years of age; the oldest ninety.

We regret the passing of these men and we ask that this House of Delegates stand in a quiet memorial to them as their names are read.

F. P. Winkler, Chairman.  
James G. Macrae, Secretary.

NAME	TOWN	AGE	DATE OF DEATH	CAUSE
Bailey, Frederick William.....	Cedar Rapids.....	61	Oct. 11, 1940	
Bickley, Carl Clifford.....	Waterloo .....	58	Dec. 18, 1940	Coronary Thombosis
Blair, Samuel Ellsworth.....	Alvord .....	73	Oct. 4, 1940	Heart Attack
Bowie, Cecil Claude.....	Carroll .....	59	May 24, 1940	
Braunwarth, Emma L.....	Muscatine .....	81	Mar. 1, 1940	Pneumonia
Casey, Joseph Montgomery.....	Fort Madison.....	75	July 30, 1940	
Clingan, Charles Edward.....	Sioux City .....	89	Aug. 8, 1940	
Cooley, Laurence Edwin.....	Dubuque .....	39	Mar. 26, 1940	
Cowen, Joseph Merle.....	Glenwood .....	35	Dec. 9, 1940	Auto Accident
Craig, John W.....	Lohrville .....	83	May 6, 1940	Heart Attack
Cremin, William Joseph Slocum.....	Sioux City .....	59	Sept. 18, 1940	
Decker, John Joseph.....	Sioux City .....	36	Dec. 18, 1940	Auto Accident
De Long, Samuel Warren.....	Tingley .....	77	June 9, 1940	Heart Disease
Ditto, Richard Coleman.....	Oakville .....	66	Mar. 28, 1940	
Dixon, John Wesley.....	Burlington .....	75	Mar. 26, 1940	Heart Attack
Gardner, Charles Walice.....	Mt. Pleasant.....	82	July 26, 1940	Heart Ailment
Garner, William Arthur.....	Kiron .....	62	Mar. 27, 1940	Heart Attack
Glew, Percival Bainbridge.....	Dallas Center.....	51	July 8, 1940	Heart Attack
Hammer, Marion R.....	Newton .....	87	July 11, 1940	Stroke
Hully, Henry David.....	Griswold .....	69	Mar. 23, 1940	
Jenks, William Henry.....	Tipton .....	54	April 22, 1940	Cerebral Hemorrhage
Kober, Augustus Frederick.....	Charles City .....	65	June 6, 1940	Chronic Liver Ailment
Langan, Joseph Clement.....	Clinton .....	70	Feb. 7, 1940	Coronary Thrombosis
Langdon, Floyd Britton.....	Des Moines .....	50	Nov. 10, 1940	Cerebral Hemorrhage
Leir, Charles Nicholas Olsen.....	Des Moines .....	70	Sept. 22, 1940	Heart Ailment
Lundby, John Langland.....	Irwin .....	57	May 30, 1940	Heart Attack
Maynard, James Henry.....	Adair .....	67	Oct. 18, 1940	Pneumonia
McGuire, Clarence Ambrose.....	Dubuque .....	52	Feb. 3, 1940	
McNeil, Benjamin F.....	Clutier .....	68	May 17, 1940	
Owens, William Edward.....	Cedar Rapids .....	78	Nov. 9, 1940	
Peppers, Austin W.....	Birmingham .....	61	Mar. 8, 1940	
Reed, Charles Sumner.....	Agency .....	70	Oct. 4, 1940	
Reed, Lloyd Thomas.....	Gravity .....	67	Oct. 17, 1940	Heart Disease

Rohlf, Edward Louis.....	Waterloo .....	71	Mar. 6, 1940	
Scrubby, Leone Morden.....	Des Moines .....	63	Jan. 25, 1940	Cerebral Hemorrhage
Sherman, Ellen Amelia.....	McGregor .....	90	Nov. 2, 1940	
Smith, Roscoe Daniel.....	Clarinda .....	59	Aug. 23, 1940	Heart Disease
Standeven, John Frank.....	Oakland .....	64	Jan. 15, 1940	
Stech, Joseph Laurence.....	Council Bluffs .....	44	Sept. 13, 1940	Heart Disease
Swearingen, Guy Howard.....	Sac City .....	59	Aug. 8, 1940	Stroke
Taylor, John Leland.....	Montezuma .....	66	Mar. 14, 1940	Auto Accident
Thompson, William H.....	Winterset .....	83	May 16, 1940	
Throckmorton, Tom Morford.....	Chariton .....	88	Oct. 31, 1940	
Tyler, Edward King.....	Muscataine .....	81	Aug. 3, 1940	
Wildish, Reginald Myron.....	Webster City .....	55	Oct. 1, 1940	Heart Attack
Winnett, Joseph Roderick.....	Eldora .....	53	Feb. 8, 1940	

The Speaker: Report of the Committee on Publications.

REPORT OF THE PUBLICATIONS COMMITTEE

The Publications Committee feels that inasmuch as it has supervised the publishing of twelve monthly issues of the Journal of the Iowa State Medical Society, no detailed yearly report of its work is necessary. Each individual issue is a resumé of our stewardship.

During 1940 the publication date of the Journal was advanced from the tenth to the first of the month, and as a result we have been able to give early publicity to some very important data. This is especially valuable in these critical times, and one of our aims is to keep the membership fully informed on developments in medical preparedness, legislative affairs and matters of interest in the field of medical economics.

We have endeavored to maintain our previous standards in the quality of scientific articles accepted for publication, to the end that publication of a paper in the Journal of the Iowa State Medical Society will be considered an achievement, and readers will be assured of worthwhile material. Mention should be made of the enlarged section for Woman's Auxiliary News, which is rapidly acquiring popularity as a source of information for members of the Auxiliary. Much fine work was done by the state officers last year in creating interest in the section, and plans for 1941 indicate an even more active year.

The following table sets forth figures on the comparative cost of the Journal during the last three years:

	1938	1939	1940
Reading Pages .....	650	640	626
Advertising Pages .....	322	320	318
Percentage of Reading Pages.....	66.9%	67%	66.3%
Original Articles.....	98	107	101
Editorials .....	72	55	58
Total JOURNAL Expenditure .....	\$12,422.58	\$11,545.70	\$11,564.09
Total JOURNAL Income.....	8,132.31	9,046.60	7,723.65
Net Expenditure for JOURNAL.....	\$ 4,290.27	\$ 2,499.10	\$ 3,840.44
Number of State Society Members.....	2,391	2,430	2,475
Net Expenditure per Member.....	\$ 1.79	\$ 1.03	\$ 1.55

It will be noted that the net expenditure per member has risen from last year's figure of \$1.03, which was the lowest cost per member ever to be recorded. While this rise is not alarming, it is significant of the trend away from periodical advertising to direct mail contacts in many national con-

cerns. Once again may we appeal to our members, through the House of Delegates, to patronize those ethical business houses which demonstrate their interest in the medical profession by advertising in state medical journals. During the last year especially, many new drugs have appeared on the market. Our members will be using them to a great extent in the months to come, and they will want to feel secure in their knowledge of the efficiency and purity of the drugs they prescribe. The physician's task in this connection can be greatly simplified if he relies on the advertisements carried in his own state medical journal. The American Medical Association maintains a bureau whose sole purpose is to investigate and evaluate all products to be advertised in medical publications under its jurisdiction. Only those products which pass the careful scrutiny of this bureau are advertised in our Journal, and this safeguard is becoming increasingly important. Delegates will be rendering a real service to members of their county societies if they will make a point of stressing this factor when reporting on the annual meeting.

Lee Forrest Hill, Editor

Dr. Fay: Mr. Speaker, it was impossible for Editor Hill to be here. He asked me to make the following additional report.

"The supplementary report of the editor consists of another plea for the membership at large to continue its support of JOURNAL advertised products. Each year brings additional proof of the valuable aid our members can give their JOURNAL by reading the advertisements and familiarizing themselves with American Medical Association Council accepted products. Your editor requests that this point be stressed in the report each delegate makes to his county medical society." I hope you will read his report. I move, Mr. Speaker, the adoption of the report, together with the supplementary report.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Public Policy and Legislation.

Dr. Bernard: I have two reports, the formal report which is in the handbook, and a supplementary report.

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Your Committee on Public Policy and Legislation again wishes to urge the members of this Society to exercise their civic responsibilities by influencing capable persons to seek nomination for public offices



in Iowa at the primary election. The economic phase of medicine is becoming more and more important. It has not kept pace with the scientific development during the past decade. The radical changes sought under the guise of social security, the many attempts to socialize medicine, and the rising political interest manifested by the various cults, have been and are a challenge to organized medicine. This challenge has been answered by a strong defense until our own economic structure can be reorganized and perfected. There are still many members of our profession who do not appreciate how near we are today to socialized medicine, many who are confused as to the proper methods to use to defeat socialization, many who look with disfavor on the various experiments in non-profit hospital and medical service plans. Your Committee believes that more physicians should be willing to sacrifice their time (and income) to assume leadership in legislative proceedings. We have many men in this Society who are qualified in every respect to assume such leadership. In the present General Assembly there are no medical men in the Senate, and the two doctors in the House are carrying a very heavy load. It is needless to add that lay support of our profession in both Houses has been of a very high order.

During the past year, and particularly during the past few months, your Committee has kept in close touch with the various health measures introduced into the national Congress. Bills introduced "to promote the national health and welfare, through appropriation for" are too numerous to mention in this report. Because of the pressure of war legislation, none of these measures has been under consideration. The Naprapaths are becoming exceedingly active and by uniting with the chiropractors have opened up a new field for aggressive legislation aimed at this profession. Fortunately, Iowa has been omitted from their select list. The 1941 Wagner bill is still in the process of preparation and has not been introduced. Our legislative group in Washington is very responsive to our wishes. We believe we have their 100 per cent support.

As most of you know, the Iowa State Medical Society will be host to the Iowa Interprofessional Association Thursday afternoon, May 15 of this year. The Legislative Committee has acted as program committee for this meeting. We feel that we have an outstanding program which should be well received by the members of the various groups. The Interprofessional Association is making slow but substantial progress.

Last year this Committee reported on the organization of Hospital Service, Inc., of Iowa which would offer group hospitalization to the people of Iowa. The company, a non-profit corporation, includes in its corporate membership doctors appointed by your State Society. These doctor members elect three of the nine board members, and two of them must be affiliated with the Iowa State Medical Society.

Sixteen thousand, five hundred and sixty-nine persons enrolled in the first year of operation ending December 31, 1940. In that year 750 patients cov-

ered by the plan were admitted to the forty member hospitals. Six hundred and thirty persons were enrolled through medical society groups. This includes doctors and members of their families and also in many cases their employees. The company has also enrolled employees of commercial firms, service establishments and governmental units. Members of professional associations such as nurses, lawyers and dentists are subscribers. Groups are enrolled in many of the larger cities in Iowa. The officers of the company report that the doctors have been very cooperative and wish to express appreciation for the assistance they have given them.

Following is a brief report from Associated Hospitals Service, Incorporated, in Sioux City:

"At the present time we have 358 groups enrolled, which include practically all of the better business houses in Sioux City and Fort Dodge, with a great many others scattered throughout this northwest district.

"Our present enrollment is 4,993 contracts, covering 9,130 persons, with total assets showing \$16,708.52, and a surplus of \$8,724.78. There are now nineteen hospitals participating in this plan, and since organization, we have paid the hospitals \$25,523.85 for care rendered our subscribers."

At this Committee's request, Hospital Service, Incorporated, and Associated Hospitals Service, Incorporated, will publish in the May issue of the Journal of the Iowa State Medical Society, a summary of their activities, their progress and interesting financial facts. These companies cover the Iowa field. They have had many obstacles to overcome; their progress has been slow, but they are definitely solving the problem of hospital service for individuals in the selected income group. We feel that they should be congratulated.

It is your Committee's firm conviction that this Society should take steps to prepare itself to meet the similar challenge of socialized medicine. Many cities, counties and states have developed medical service programs. A careful study should be made of these programs, data collected, and this information should be made available to the Executive Council and the House of Delegates.

An early survey of the membership of the Society in the fall brought no suggestions for Society-sponsored legislation in the 49th General Assembly. Many bills introduced by other groups affect us indirectly, and when they have been to our advantage we have supported them. The majority of the bills were carelessly worded, hastily written affairs. Interested groups were not consulted in advance; this has necessitated endless conferences, and in some instances, rewriting of entire sections of the bills.

The bills which have demanded most of our attention in the present General Assembly have been those introduced by other groups. S. F. 2, introduced by Berg, the premarital bill which was defeated two years ago in the House because of a fee-establishing amendment, is probably one of the most popular bills before this legislature.

H. F. 35, by Keeney and Eckerman, the so-called

drunken driving bill, has created an unusual amount of discussion. Your Committee provided the sponsors of this bill with the technical information included in the bill. It has now been referred to Judiciary Committee No. 1.

S. F. 157, the chiropractic bill, which is now in the sifting committee of the Senate, is the chiropractors' outstanding effort to acquire "all the rights and privileges of physicians and surgeons." It states that they "shall be subject to all the obligations of physicians and surgeons as prescribed by the statutes of this state insofar as they are not in conflict with the provisions of this chapter." An effort is being made to class it as an educational bill because it will raise the educational requirements of the chiropractic schools. We trust that this bill will die a natural death in the sifting committee.

Bills introduced and yet to be considered are the optometry bill, the modified compulsory vaccination bill, and one to permit public employees to participate in hospital non-profit service plans.

The members of the Society have been kept informed about legislative matters by legislative bulletins, and when called upon, have given this Committee the best support it has ever had. A supplementary report will be given from the floor of the House.

Fred Moore, Chairman  
R. D. Bernard  
L. A. Coffin  
F. P. McNamara  
Robert L. Parker

The Forty-ninth General Assembly of Iowa adjourned April 12, 1941. We feel that, from the standpoint of legislation affecting public health, the results were satisfactory. Senate File No. 2, that is the premarital bill, is now the law. The fee-fixing amendment was eliminated. It is now squarely up to the medical profession to preserve the popularity of this measure. It provides for free choice of physician and he, in turn, may fix his own fee. Abuse of this privilege can easily make this law unpopular. We urge this group to discuss this fee problem so that the delegates may carry back to their county societies a cross-section of the opinions expressed.

Senate File No. 10, requiring that the superintendent of the Glenwood State School shall be a physician, also Senate File No. 211, the optometry bill, and Senate File No. 265, to permit payroll deductions by employees of public institutions so that they may have group membership in a non-profit hospital service plan, have been signed by the Governor and will become the law July 4, 1941. Senate File No. 95 and House File No. 122, the pharmacy bills, remained in the respective sifting committees. House File No. 135, the so-called drunken driving bill, was passed by the House but defeated by being retained in the Senate sifting committee. House File No. 511, requiring vaccination and diphtheria immunization by first term school children, was introduced too late to receive consideration by both houses. It is our opinion that such a measure can be passed successfully at the next session of the legislature. Senate File No. 157, the chiropractic bill, was defeated by remaining in the Senate sifting committee. Social security health legislation has, as yet, not appeared in Congress. Many minor bills have been introduced, and a few, of course, have merit. On May 2, attorneys for the American Medical Association submitted to the District Court three motions together with argument to set aside the recent adverse decision of that court.

I can add little to what has been written or will be said concerning Fred Moore. My intimate association with Fred from the Basic Science days until he went to bed last December, our hundreds of trips over the state organizing the Interprofessional Association, our annual trips together to Chicago to attend the Northwest Conference and our close association at the last two sessions of the American Medical Association have made a deep impression on my life. I am proud of this friendship, proud of his trust, and few men in this Society will miss him more than I.

Mr. Speaker, I move the adoption of the report as printed in the handbook plus the supplementary report.

*The motion was seconded, put to a vote and carried.*

## Reports of Special Committees

The Speaker: Next we have reports of Special Committees of the House of Delegates. The first one is the Baldrige-Beye Memorial Committee, Dr. Fowler of Iowa City, Chairman.

Executive Secretary McCord: We had a letter from Dr. Fowler in which he said no essays had as yet been submitted for this year.

The Speaker: We will pass that. Committee on Child Health and Protection.

### REPORT OF THE COMMITTEE ON CHILD HEALTH AND PROTECTION

Your Committee on Child Health and Protection reported in the handbook for 1940 that it had been making a study of the incidence of contagious and infectious diseases in the state. That our record is

very poor is evident, more cases of smallpox being reported from Iowa over a ten-year period than from New York and its five adjacent states. Following a report of this study the House of Delegates granted our request to sponsor a statewide immunization program. As you know our statewide program for vaccination against smallpox was carried out during the week starting November 11, 1939. Over 70,000 vaccinations against smallpox were given during that period.

With the encouraging results from our 1939 program we again asked the House to sponsor one for 1940, and this was granted. The 1940 program was carried out during the week of November 4, 1940. This immunization campaign stressed both smallpox



and diphtheria and your committee is pleased to announce that over 42,775 smallpox vaccinations and 54,031 diphtheria immunizations were administered to the children of the state. As stated last year the program was the cooperative effort of the Committee on Child Health and Protection of the Iowa State Medical Society, the Iowa State Department of Health and interested lay groups. Each county society carried out its own program and set its own fees, working with the central office through its county chairman appointed for this work. The diphtheria toxoid and smallpox virus were furnished by the State Department of Health and distributed through a local pharmacy. We again stressed that the parent-physician relationship should be maintained insofar as possible. It is our desire to foster this program as a yearly event until such time as other measures may be possible. Your committee still works for the day when every child will be protected against smallpox and diphtheria by the time he is one year of age.

This committee is working with the 4-H Club groups. Copies of radio talks on health and subjects in which they are interested are furnished to the state leaders so that they in turn may furnish them to their various groups.

The committee expresses its approval and hopes for a continuation of postgraduate education. We recommend that more physicians take advantage of the postgraduate course in obstetrics offered at the University medical school. We again recommend that the county societies, singly or in groups, devote at least one meeting a year to a program on obstetrics and pediatrics of the newborn, the Speakers Bureau to furnish the speaker as part of its postgraduate program.

Following your approval of our request, your committee in cooperation with the University College of Medicine and the State Department of Health arranged a three-day postgraduate course on the care of the newborn and prematurely born infant. Every physician believed interested was asked to attend; later the enrollment was opened to the profession at large, with a maximum of seventy-five applicants to be accepted. Forty-eight applicants sent in their registration, but several of these did not attend. Four out of state, two physicians from Nebraska, one from Illinois and one from Michigan enrolled. The fee for the course was set at \$5.00, rooms were made available at the Law Commons at \$1.00 per night; and the Quad Cafeteria was opened ahead of time to take care of the physicians. Dr. E. D. Plass, a member of this committee and professor of obstetrics at the University, had charge of arranging the program. A very excellent course was offered. Dr. Julius H. Hess of Chicago, Dr. Horton Casparis of Nashville and Dr. Irvine McQuarrie of Minneapolis were guest speakers on the program, ably supported by members of the excellent faculty of our medical school. A full three-day program was carried out and it was well worth three days of any physician's time. The committee would like to see the course

repeated but would have to be assured of a better response than was received last fall. It is not often one can hear three outstanding men in the United States besides the members of our own faculty in three short days.

Your Committee hopes to continue the study of contact infections, the juvenile court system and better regulation of maternity homes. It also hopes to stimulate better physical examinations of the preschool child. A motion picture "When Bobby Goes to School", is available for showing to county medical societies. It gives an actual demonstration of how such a physical examination should be conducted and your committee believes it is very helpful for physicians who cooperate in preschool examinations.

H. E. Farnsworth, Chairman

Dr. Farnsworth: Before moving the adoption of this report, I would like to call the attention of the House of Delegates to the main work which our committee has been doing in the last two years. You will note that in our statewide program each fall, a year ago there were over 70,000 smallpox vaccinations done during that week's period. We did not stress diphtheria immunization the first year. Last year we stressed it, and you will note that there were 54,031 diphtheria and 42,775 smallpox immunizations. During the two years, in the two programs, 112,775 youngsters were immunized against smallpox, and 54,031 received diphtheria immunizations. If it meets with the approval of the House of Delegates, we would like to have the privilege of going on with that program this fall if conditions seem fit, and the committee feels that we should go on with it. I *move* the adoption of the report.

*The motion was seconded, put to a vote and carried.*

The Speaker: Fracture Committee.

#### REPORT OF THE FRACTURE COMMITTEE

This year the Iowa State Fracture Committee has attempted to carry forward its main objective—education of the physicians in general practice in the handling of fractures. County societies have cooperated well in setting aside one meeting each year for the study of fractures. The fourth annual fracture clinic was held at Cedar Rapids on November 14, 1940. This year a symposium on fractures of the spine was made the principal topic of the afternoon. Dr. George L. Apfelbach of Chicago was the guest speaker.

The committee is doing further work toward establishing a library of movie films on treatment of fractures. These films are available for county and staff meetings on application to the central office of the State Society.

For its 1941 clinic, the fracture committee is sponsoring a joint meeting of the Central States Society of Industrial Medicine and Surgery and our own State Society at the annual meeting in Davenport. An excellent program on subjects allied to fractures and industrial work will be arranged, and your com-

mittee hopes all county fracture chairmen will attend the meeting, which will be held May 13.

Donald C. Konzett, Chairman

Dr. Konzett: As a supplement to the report as printed in the handbook, I would like to ask the delegates and all members, if possible, to view the exhibits in the Exhibit Hall, which have been placed there by members of the Fracture Committee. Purposely, that exhibit was made without giving the names of the exhibitors. The committee felt that this was a state proposition and we did not wish to exhibit as individuals. The report is in the handbook, but as I am not a member of the House this year, I merely submit the report as presented.

Dr. Fay: I move its adoption.

*The motion was seconded, put to a vote and carried.*

The Speaker: Historical Committee, Dr. Biering. (Absent)

#### REPORT OF THE HISTORICAL COMMITTEE

The Historical Committee has endeavored during the past year to collect data and various information in order gradually to complete the early medical history of Iowa. More recently more complete local histories of the pioneer period in a number of counties have been obtained, and we hope that the members of the Society will aid the committee in every way possible so that the story of pioneer doctors in Iowa may be properly recorded in keeping with the fine medical tradition of that period of Iowa history.

The committee is under particular obligation to H. G. Langworthy, Secretary of the Committee, for his fine efforts in connection with county medical history.

Walter L. Bierring, Chairman  
John T. McClintock  
Tom B. Throckmorton  
Frank M. Fuller  
H. G. Langworthy, Secretary

Dr. Suchomel: I move that the report as published in the handbook be adopted.

*The motion was seconded, put to a vote and carried.*

The Speaker: Life Membership Committee, Dr. Channing Smith.

Dr. Smith: Dr. Parker has that report.

#### REPORT OF THE COMMITTEE ON LIFE MEMBERSHIP

By unanimous action of the Committee on Life Membership, all candidates for life membership were rejected for the following reason: On account of the indefinite wording of Section 2 of Article IV of the Constitution and By-Laws of the Iowa State Medical Society, your Committee cannot conscientiously pass upon the recommendations received. We would recommend to your honorable body that the following be adopted in lieu of the above Section 2 of Article IV of the Constitution and By-Laws.

Article IV, Sec. 2. Life Members. Any member of the Society who is in good standing may be entitled to life membership provided that he has been so recommended by his county society for life membership; that he has been in the practice of medicine

for fifty years or more; that he has been a member of the State Society for thirty-five years or more; or that the candidate is one who has through total or permanent disability become incapacitated for the further practice of his profession.

Channing G. Smith, Chairman  
Prince E. Sawyer  
Thomas A. Burcham

Secretary Parker: I move, Mr. Speaker, that the report of the committee be accepted.

*The motion was seconded.*

Dr. Reeder: This recommendation specifically states that life membership is limited to men in practice. How about men who are full-time members and are not practicing?

The Speaker: Let us vote on the motion first, then we will discuss that. You have heard the motion to adopt this report. All in favor signify by saying "aye". *It is so ordered.* This proposed amendment to the Constitution has to lay over a year, for discussion at the next annual session, for its adoption or defeat.

Dr. Reeder: I move that this be referred to the Committee on Constitution and By-Laws to report on Friday.

*The motion was seconded, put to a vote and carried.*

Dr. Braunlich: Is it in order to recommend one of these members which the committee did not approve for life membership? I do not think they found any objections, necessarily, to all of them, but I would like to recommend Ed Strohbehn. He has been a doctor for over fifty years, and he has been a member of the Society for all these years, and I think he meets all of the requirements. We made him a life member of the Scott County Society, whether he is made a life member of the State Society or not. I would like to offer him as a Life Member.

The Speaker: Do you offer a motion to that effect?

Dr. Braunlich: Yes.

Dr. Woodward: The ruling of the House of Delegates is that all proposals for life membership must be referred to this committee before the House acts on them.

Dr. Reeder: It is out of order, Mr. Speaker.

Dr. Goenne: Is this question open for discussion? What is the qualification to become a life member at the present time? Isn't it that he must first be recommended by his local society and then recommended to the State Society?

The Speaker: There was action at the last meeting. Will the Executive Secretary, Miss McCord, read the rule as it stands at present?

Executive Secretary McCord: It is to be found on page 4 of the new Constitution and By-Laws. It is a part of the Constitution. "Sec. 2. Life Members. Any member of the Society who is in good standing may be entitled to life membership provided he has been recommended for such membership by his county society. He shall receive the transactions of the Society and enjoy all the privileges



of members and may be exempted from the payment of annual dues upon vote of the House of Delegates." Last year we appointed a committee to go over these recommendations, and the report of that committee was accepted. The House passed a motion in the Friday morning session last year which authorizes the President to appoint a committee each year to sift these requests for Life Membership prior to the annual meeting.

Dr. Suchomel: Mr. Speaker, that gives the boys in Scott County a perfect right to appeal to the House of Delegates for a life membership for their man. The committee may have turned him down, but the House of Delegates still has the power to vote these life memberships.

Dr. Goenne: Ed Strohehn, of whom Dr. Braunlich spoke, has been one of the finer type practitioners here in Scott County for a period of fifty years. We, as members of the Scott County Medical Society, felt that if anyone was entitled to life membership, Dr. Strohehn was. He has been a member of the Scott County Medical Society over that entire period of years. According to the Constitution as read, at the present time it is necessary for the Scott County Medical Society or any local organization to recommend a man for life membership, if we feel he is so entitled to it.

Dr. Channing Smith: May I have the privilege of the floor for a minute? For some unknown reason, I happen to be chairman of this committee. There is no doubt in our mind that the doctor just mentioned is entitled to life membership. The difficulty lies in the wording of that section of Article IV. There were many other men, as well as this man, who are also entitled to life membership, and there were many men recommended who were really not entitled to this, but where are you going to draw the line of distinction? Your committee thought it would be better to reject all of these recommendations for another year, so that this House of Delegates could take some action toward changing this article of the Constitution to enable us to distinguish between those who are deserving and those who are not deserving.

Dr. Albright: Mr. Speaker, may we ask the Secretary or Miss McCord to read the motion that was passed last year, again, please?

Executive Secretary McCord: I will read this whole thing. This was after the committee had made its recommendation and the names had been voted upon. Dr. Felix Hennessy, who was present, said:

"Mr. Speaker, may I have the floor? I hate to delay you but I fear you have left the life membership business, which you discussed before the previous motion, a wide open proposition. I think this is the legislative body, and I think you should authorize the President to appoint a committee every year to sift these requests prior to the annual meeting, and I so move, if it is my privilege. The motion was seconded, put to a vote and carried."

Dr. Albright: If I understand the first principles of parliamentary procedure, a committee can, by

this motion which was passed by the House of Delegates, have the power to sift but that motion does not give the committee power to act, and the House of Delegates is still the supreme body in the Iowa State Medical Society.

The Speaker: Under the present Section 2, Article IV of your Constitution and By-Laws, the motion regarding life membership for Dr. Strohehn of Scott County is before the House for action.

*The question was called for, put to a vote and carried.*

The Speaker: Are there any other proposals for life membership? We will now have the report of the Medical Library Committee.

#### REPORT OF THE MEDICAL LIBRARY COMMITTEE

Pieces of literature consulted in library	13,220
Pieces of literature loaned.....	17,323
	30,543
Requests for literature.....	4,016
Patrons served in the library.....	3,085
	7,101
Bibliographies prepared.....	37
Letters written.....	1,627
Postal cards written.....	2,495
	4,122
Telephone calls.....	1,270
Accessioned volumes in library.....	24,312
Periodicals received by paid subscription	185
Periodicals received by gift subscription	82
	267
Reprints .....	28,248
Gifts to the library (books, journals and reprints) .....	17,964
Gifts to other libraries (books and journals) ..	8,904
Borrowed from Surgeon General's Library for doctors.....	51
Borrowed from other libraries for doctors.....	32

Jeannette Dean-Throckmorton, Medical Librarian

Dr. Jeannette Dean-Throckmorton: Mr. Speaker, it is a pleasure to bring you a supplemental report for the Iowa State Medical Library. You will be pleased to hear that within the past year we have been allotted five more double stacks, and although a minimum of ten stacks was necessary to relieve our crowded condition, this extra shelving loosened the tightly crowded books and journals, thus saving wear and tear on them. We hope that with the building of a new office building, our crowded condition may be relieved. I have often mentioned to you our lack of funds for binding. You will be happy to hear that I went before the Retrenchment and Reform Committee last fall, and that the members graciously allocated \$1,000 to the Medical Library for binding purposes. Sixty hundred and sixty-eight volumes were bound with the money. While this is only a beginning, it is heartening to have binding done again after having been years without funds for this purpose.

The doctors of Iowa have been very generous with their gifts of books and journals in the past

year, thereby enabling us to fill in our files and to exchange with other libraries to our mutual advantage. I am very anxious to obtain early issues of the JOURNAL of the Iowa State Medical Society, since many of the large libraries in the United States have incomplete files of volumes published before 1930. I shall be glad to have any other medical journals which you will donate to the library.

I wish time would permit me to mention all the doctors who have generously donated books and journals to the library in the past year. I can mention only a few. Dr. G. F. Harkness sent us a great many eye, ear, nose and throat publications, for which we are most grateful. We are at present working on books from the library of Dr. Fred Moore, and have just unpacked the entire library of Dr. J. Frederic Clarke of Fairfield, among which are some books which belonged to his father. We also have on hand material received from Dr. Eppie McCrae of Eddyville which we have not had time to unpack. May I also mention that we have received many generous donations from Dr. S. A. Spilman, William L. Alcorn, Peter M. Herny, Harold W. Morgan, John T. Hanna, Florence Johnston, T. A. Minassian and Mrs. H. G. Welpton and our ever faithful friend now growing very frail, Mrs. D. S. Fairchild.

Exchanges of material with libraries abroad have been seriously hampered due to the war. However, we received from the Library of the University of Bristol, England, a splendid file of the *Bristol Medical-Chirurgical Journal*, five volumes of the *Lancet* published 1851-1855, which our set lacked, and a great number of the valuable Transactions of the Medical Society of London, all these in exchange for as complete a file of the JOURNAL of the Iowa State Medical Society as we had available, together with other American journals from our duplicates. I am very glad to get these publications from England since I feel that with this present war and the destructive bombing of business offices and libraries, it will be increasingly difficult to complete our files of foreign journals. Current medical journals from the British Isles continue to arrive with surprising regularity. At present we are effecting an exchange of material with the Royal Australasian College of Surgeons of Melbourne, Australia, and with the Canterbury Medical Library in Christ Church, New Zealand. Mr. Speaker, I move that this report be approved.

*The motion was seconded, put to a vote and carried.*

The Speaker: Committee on Medical Preparedness.

#### REPORT OF THE COMMITTEE ON MEDICAL PREPAREDNESS

The Committee on Medical Preparedness of the American Medical Association was formed on authority of the House of Delegates of the American Medical Association at the last annual session held in New York in June, 1940. Fifteen members were appointed to this committee, and the United States was divided into districts, one member being as-

signed to represent each district. The representative for the Seventh Corps Area, in which Iowa is located, is Dr. R. W. Fouts of Omaha. Each state society was asked to appoint a state chairman on medical preparedness and he, with the president and secretary of the society, formed a state committee on medical preparedness.

Some of the duties of the American Medical Association Committee on Medical Preparedness are as follows:

1. To consider the problems involved in providing medical personnel for military, naval and civilian needs.
2. To consider providing medical personnel for making physical examinations of the young men who are conscripted for military service, young men assigned to vocational training, persons on relief, and those concerned with war industries.
3. To consider the economic problems, including financial arrangements, leaves of absence, part time service and other factors associated with civilian medical service.
4. To maintain contact with and to represent the Association in conferences with the Surgeons General of the Army, Navy, and Public Health Service, and if necessary with other governmental agencies.
5. To maintain contact with state chairmen on medical preparedness.
6. To encourage and coordinate the activities of the several state chairmen for the Committee on Medical Preparedness.
7. To formulate instructions for the guidance of state chairmen.
8. To review and to approve or disapprove recommendations received from state chairmen.

The functions of the State Committee as outlined by the national committee are:

1. To follow up the survey initiated by the American Medical Association at the behest of the federal government.
2. To recommend to the Governor of the state physicians to serve on local draft boards, district advisory boards, and such civilian personnel for induction boards as may be required by military and naval authorities.
3. To cooperate with state health authorities when requested, to work out health programs in those communities carrying on special defense and preparedness activities.
4. To aid in setting up medical preparedness committees in various counties when requested.
5. To enumerate to higher authority those reserve officers who are more necessary to their communities than to the defense program.
6. To prepare lists of civilian physicians who for various reasons should be exempt from military service.

Your Committee is glad to report that several of



the above functions have been carried to completion. The survey is very nearly complete in Iowa. On January 15, 1941, there were 191 physicians in Iowa whose schedules had not been received at the Chicago headquarters. The division between members and non-members of the State Society was just about equal.

The first action of your Committee in this respect consisted of mailing a letter to each member of the State Society, explaining the purpose of the questionnaire and asking if it had been filled in and returned. A reply card was enclosed. In about six weeks, this was followed by another letter. At first the response was excellent, about 20 per cent of all physicians in Iowa replying to our first letter by return mail. However, the returns became slower and fewer. Letters were then sent to county secretaries, with only a very slight increase in returns. We then turned to the deputy councilors and returns improved, but soon dwindled. Non-members were then contacted by letter and return card, and much to our surprise, the response was even greater than from members. In all, about 3,500 additional questionnaires were mailed by our office after August 1, 1940. Our returns should now be about 96 per cent complete. No doubt it will be impossible to have every physician respond; we have received several letters stating in no uncertain language that no reply would be forthcoming.

On September 19, 1940, your chairman attended a meeting of all state chairmen in Chicago. A report of this meeting has already appeared in our Journal under the title "How It Is To Work". This report, incidentally, was reprinted in the pamphlet "Modern Medicine".

The most difficult and annoying situation arose over the appointment of the medical advisory boards and the physicians for the local draft boards. The American Medical Association wrote us several times about these appointments, asking for the lists. When we asked where we could get this information, we were told the Adjutant-General's office should have conferred with us about the appointments. We then wrote the Adjutant-General and after ten days delay, had an evasive answer. While in Chicago, the chairman was asked to return by way of Des Moines to certify the list of appointments which had been made through the Adjutant-General's office. We then learned he had not followed his instructions to consult with us but had gone ahead with the recommendations on advice received elsewhere. We refused to certify the list; held a conference with his staff, and promised him a list of two physicians for each local draft board within forty-eight hours, the recommendations to come from the county medical societies. Wires were then sent to every deputy councilor, outlining the situation, and because of their splendid response we were able to give the complete list of suggested examiners to the Adjutant-General in the time limit specified. When the final list as approved by the Governor went

to the President for appointment, 38 substitutions had been made. This caused a certain amount of furore and your committee had some explanations to make about it.

The situation in regard to the medical advisory boards was also unfortunate. Although the list was submitted to the Governor through the Adjutant-General on September 20, appointments were not made until early in December after the first conscripted men had been examined. At this time, however, all appointments have been made and the boards are functioning.

The Committee has also recommended certain civilian physicians who are willing to help with special examinations at the induction center (Fort Des Moines). All of the physicians are from Des Moines, since it is the only induction point in the state.

Following the work on the selection of personnel for the various boards, your Committee asked each county medical society to appoint a committee or a chairman on medical preparedness. Sixty-one of the 97 counties did so and are for the most part functioning.

The last, and probably the most difficult task assigned to the Committee was that of reviewing the list of medical reserve officers in Iowa and designating those who, either on account of age or indispensability to the community, should not be called to active service at this time, and of passing upon all other physicians in the state and preparing a list of those who should be exempt from military service. To obtain this information, we asked the county medical preparedness committees or county officers to furnish us a list of the physicians in their county who should be exempt. We set up certain standards for the guidance of the counties, in which the following aspects were to be considered: age; physical condition; dependents; indebtedness; and indispensability to the community. In all, eighty-three county societies cooperated fully with the state committee and submitted their lists. In the remaining fourteen, the state committee was forced to determine its own list. This may not be satisfactory to all members, but it was the best that could be done under the circumstances.

In addition to the foregoing, the Committee has taken action in specific instances and recommended indefinite deferral of reserve officers from active service. All action in these cases was initiated by requests either from the county medical society or local civic bodies.

Owing to the early deadline on reports for the handbook, a supplemental report will be made at the annual session.

Thomas F. Suchomel, Chairman  
F. P. McNamara  
Robert L. Parker

Dr. Suchomel: Mr. Speaker, I trust that you have all read the preliminary report that is printed in the handbook. We have an additional report to make, which I will take time to read, and following which,

if there are any questions relative to medical preparedness that I can answer, I will gladly do so.

On March 26, 1941, a request was received from the American Medical Association to conduct an additional survey on the availability of physicians for military and naval service. Three sets of blanks were sent to each county unit to be filled in by the respective county societies. Form No. 1 comprises a summary of the medical situation in each county. Form No. 2 lists the physicians deemed essential to medical staffs and hospitals and related institutions, health departments, and to medical schools, if any. Form No. 3 lists those physicians who are deemed essential for civilian health and industrial practice, especially related to national defense.

The response and cooperation of the various county officers and medical preparedness committees have been very gratifying and are greatly appreciated by the State Committee on Medical Preparedness. The time limit set upon these reports by the Medical Preparedness Committee of the American Medical Association was May 1. Consequently, it was necessary that the various county reports be in the State Chairman's hands by April 28, 1941. As of that date, eleven counties had failed to submit their reports. They were as follows: Calhoun, Chickasaw, Clarke, Clinton, Delaware, Dickinson, Harrison, Poweshiek, Scott, Webster and Winneshek. Of the above, only one county went definitely on record as being opposed to the survey. Your committee prepared the forms for these counties from information compiled for the Surgeon of the Seventh Corps Area in a previous report. In other words, we had earlier reports from these counties on the necessity of physicians being deferred or exempt from military service, and we simply transferred that information to these forms and made out the reports to give Iowa 100 per cent clearance in the American Medical Association.

It is our opinion that a sizeable percentage of the medical profession not only in Iowa, but in the entire nation, either has failed to grasp the seriousness of the situation or is indifferent. It is our opinion, from information received at a meeting in Chicago in February, that conscription of medical personnel is definitely contemplated by the Federal Government for military, naval and public health service. It was further stated that conscription would include all physicians physically fit between twenty-one and fifty-five years of age. It is the opinion of your State Committee that such a move will be made by January 1, 1942. This opinion is based upon the fact that there are about 15,000 medical reserve officers in the United States, and for an army of 1,400,000, about 8,000 medical officers are necessary. Eliminating those who fail to meet physical requirements, this group will have become exhausted by January 1.

In the report published in the handbook, reference is made to a report sent to the Seventh Corps Area wherein were listed physicians who should be exempt from military service. This report also included reserve officers. During the last month our

attention has been called to two instances in which reserve officers were called into active service after being recommended for deferment by the State Committee. This matter was promptly discussed with the Chairman on Medical Preparedness of the Seventh Corps Area, Dr. R. W. Fouts of Omaha, to whom we voiced our feeling that the preparation of the original report was time and effort wasted. After receiving his reply we felt that the Surgeon of the Seventh Corps Area could not have acted otherwise. The United States is divided into nine corps areas, and it seems that the Seventh Corps Area, comprising the states of North and South Dakota, Nebraska, Kansas, Missouri, Iowa and Minnesota, contains approximately 25 per cent of the medical reserve officers in the entire United States. Consequently, when an order comes from the War Department for a definite number of medical reserve officers, the Seventh Corps Area will have to supply its proportionate share.

A meeting of the State Committee on Medical Preparedness was held in Des Moines April 17, 1941, which perhaps was the most important since the creation of this Committee. The meeting was attended by members of the State Board of Medical Examiners and Judge Rankin of the Attorney-General's office. The purpose was to clarify the status of physicians substituting for those of our members who have been called into military service. The law as it stands considers those men who maintain an office aside from their regular place of residence as itinerant physicians, subject to an annual license fee of \$250.00. Situations have arisen in which it will be necessary to provide medical service to communities whose only physician has been called into service. It seems that some pressure is being placed upon the authorities to waive the requirement of citizenship in order to obtain a license to practice medicine in Iowa. There are many alien physicians available and a temporary license for them has been sought. Your Committee and all those present at the meeting, including the Board of Medical Examiners and Judge Rankin, were definitely opposed to lowering the bars for obtaining a license to practice medicine in Iowa. After a considerable discussion it was the unanimous expression of the group that the various county societies, preferably through their medical preparedness committees, recommend physicians who for the duration of the present emergency, in the absence of the regular physician of any given community, will provide ethical medical service to the residents of these communities. The county societies are also to notify the Board of Medical Examiners of such physicians and certify that they are not itinerants. The Board of Medical Examiners promised full cooperation in this matter.

Perhaps the question asked most frequently is: what is the status of medical students in the present set-up of national defense? Under the present Selective Service law all students in our colleges were given a deferment in classification until July 1, 1941. So far there has been no change in the



law. At present classification of medical students is made at the discretion of the local draft board. If that body feels that continuation of studies is essential to national security and welfare, the students may be placed in a deferred class. This action was urged in a press release from Brigadier-General Lewis B. Hershey, Selective Service Deputy Director, under date of May 3. He urges that local boards continue such deferments as long as such students progress satisfactorily.

I might add that in all probability, to get these deferments, it will be necessary for students to obtain statements from the deans of their respective medical schools that they are making satisfactory progress. They may submit this statement to their local board and thereby obtain continued deferment. It is our understanding that the same action will be taken for dental students. There is some speculation pointing toward a revival of the Students' Army Training Corps of World War I days. Having had personal experience in the S. A. T. C. in 1918, I feel that it would be a distinct handicap to the student if he were forced to study in barracks as we did in 1918, and I feel that the American Medical Association, through its Committee on Medical Preparedness, should exert every possible effort to avoid a repetition of this situation. I think Dr. MacEwen will confirm this observation.

A letter was recently sent to all county societies urging them to appoint medical preparedness committees, and to certify these committees to the state office. A similar request was made in September of 1940. So far there are still about thirty counties which have failed to do this. We urge that the delegates from these counties see to it that action is taken at the earliest possible moment. Again we wish to express our appreciation of the cooperation by the county societies with the State Committee on Medical Preparedness in doing a difficult job, and, I might add, a highly unpopular one. Mr. Speaker, I move the adoption of the supplemental report and the report as printed in the handbook.

*The motion was seconded, put to a vote and carried.*

Dr. MacEwen: We have already received a definite ruling from the State Director of Selective Service that all medical students will be exempt if they are going on, and we have received regular forms for making requests for deferment.

The Speaker: The next is the Committee on Military Affairs, Colonel Shane.

#### REPORT OF THE COMMITTEE ON MILITARY AFFAIRS

The military surgeons of Iowa met for their annual banquet on Wednesday evening, May 2, 1940, in accordance with their custom of gathering on the first day of the annual session. Lieut. Colonel Duckwall spoke on military preparedness. Adjutant-General Grahl was a guest of honor.

In July the president and vice president of the committee met in Davenport with the president and president-elect and program committee of the State Society to discuss the appointment of a chairman on

medical preparedness for Iowa. Thomas F. Suchomel of Cedar Rapids was chosen to serve in this capacity because of his long interest and work in the field of military medicine.

Since that time, the committee has cooperated with Dr. Suchomel in every way possible. Meetings were held in every district in the state during October, at which time the medical preparedness program was explained and discussed. Dr. E. D. McClean, vice president of the committee, made several addresses to county society meetings in addition to the district gatherings. Other talks are being arranged for the future.

Robert S. Shane, President  
E. D. McClean, Vice President  
J. C. Donahue, Secretary

Dr. Shane: Mr. Speaker, I move that the report as printed in the handbook be adopted.

*The motion was seconded, put to a vote and carried.*

The Speaker: Committee on Pneumonia Control.

#### REPORT OF THE COMMITTEE ON PNEUMONIA CONTROL

The State Advisory Committee on Pneumonia Control met on three or four occasions last fall, however, because of illness I was able to attend only one of these. The main purpose for these meetings was to revise the booklet on diagnosis and treatment of pneumonia. Other possible means of extending the usefulness of this committee were also discussed.

Fred M. Smith, Chairman

Dr. Suchomel: I move the adoption of the report.

*The motion was seconded, put to a vote and carried.*

The Speaker: Committee on Public Relations, Dr. Herbert Stroy.

#### REPORT OF THE COMMITTEE ON PUBLIC RELATIONS

The committee on public relations has been rather inactive during the past year. This inactivity can in part be explained by the fact that the chairman has been more than occupied by his activities as local selective service examiner. On the whole we have attempted to follow more or less the same procedure that we have followed during the past few years while serving the society on this committee. Every effort has been made to guide lay groups in their efforts to disseminate medical information to the general public, and your chairman feels that a great deal of good has come from these efforts. When the present military emergency has passed we feel that much more may be accomplished, and your committee will do all it can to further medical thinking among the general public.

H. E. Stroy, Chairman

Dr. Stroy: Mr. Speaker, I move the adoption of the report as printed in the handbook.

*The motion was seconded, put to a vote and carried.*

The Speaker: Committee on Scientific Exhibits.

### REPORT OF THE SCIENTIFIC EXHIBITS COMMITTEE

The Committee on Scientific Exhibits wishes to report that sixteen exhibits were presented at the 1940 annual meeting of the Iowa State Medical Society. Booths for each exhibit were used for the first time. They more than doubled the available wall space and at the same time made each display an individual entity. The exhibitors commented very favorably on this change, feeling that it enabled them to make a better display.

After receiving permission from the Executive Council, the committee plans to award a certificate of merit to the outstanding exhibit, the first award to be made at the 1941 meeting. We hope this will stimulate more interest in the section and will produce exhibits of a higher quality.

In addition to the regular scientific exhibit, an interesting presentation was made by the Iowa X-ray Club under the direction of Dr. Allan Phillips. Several interesting conditions were shown by a series of films.

The plan of showing moving picture films on scientific subjects has been continued. Dr. J. A. Downing, who was in charge of this section, was able to procure films that were instructive to the men in the various branches of medicine. As in the past two years, much interest was shown in these pictures and we feel that they warrant a permanent place in the annual meeting and hope they can be continued.

L. M. Overton, Chairman

Dr. Overton: The committee wishes to submit its report as published in the handbook. In addition, I would like to add a word. The committee has attempted to improve the facilities, from year to year, for displaying exhibits. The committee would appreciate it very much if the members of the House of Delegates would inspect these exhibits from this viewpoint and would welcome any suggestions for changes that they may have. I move the adoption of the report.

*The motion was seconded, put to a vote and carried.*

The Speaker: Woman's Auxiliary Advisory Committee, Dr. Hill of Newton. (Absent.)

### REPORT OF THE WOMAN'S AUXILIARY ADVISORY COMMITTEE

As chairman of the Advisory Committee I wish to report the following:

The eighth annual Health Essay Contest sponsored by the Woman's Auxiliary to the Iowa State Medical Society and Speakers Bureau of the Society is meeting the great success which it merits. The subject of essays this year was "Food for Health's Sake." Participants in this contest are high school students in the state of Iowa. In these essays the vital factors of foods, the importance of sanitary foods and of health habits are emphasized.

The auxiliary is stressing the importance of reading Hygeia. It has sent delegates to the meeting of the National Board of the Woman's Auxiliary to the American Medical Association. At this meeting the highest honor was conferred on Iowa for its essay contests.

The auxiliary is growing. A new county organization was effected recently in Adair county. Its members in various counties cooperate with the county medical societies and State Department of Health in immunization programs in schools in an attempt to keep this work out of the hands of lay control. They lend their influence toward such projects as prenatal care, summer round-ups, cancer control study, tuberculosis campaigns, and serve as a contact between lay groups and the medical profession. They are also lending assistance through their legislative committee by cooperating with the Iowa State Medical Society in all of its legislative activities.

Through their discussions and through the lay press this organization unites in making the communities health conscious. It is assisting in carrying the message of the accomplishments of American medicine to the public and thus cooperates in the preservation of its high standards.

James C. Hill, Chairman

Dr. Bernard: I move the adoption of the report.

*The motion was seconded, put to a vote and carried.*

## Reports of Committees of the Council

The Speaker: Reports of Committees of the Council: Speakers Bureau Committee, Dr. Priestley.

### REPORT OF THE SPEAKERS BUREAU COMMITTEE

To the Members of the Council:

The Speakers Bureau continued to progress during 1940 and its various activities have shown a marked advancement. Records reveal that our medical education has reached a greater percentage of the physicians in the state and also many lay groups.

Twelve postgraduate medical courses covering six councilor districts were conducted by the Bureau.

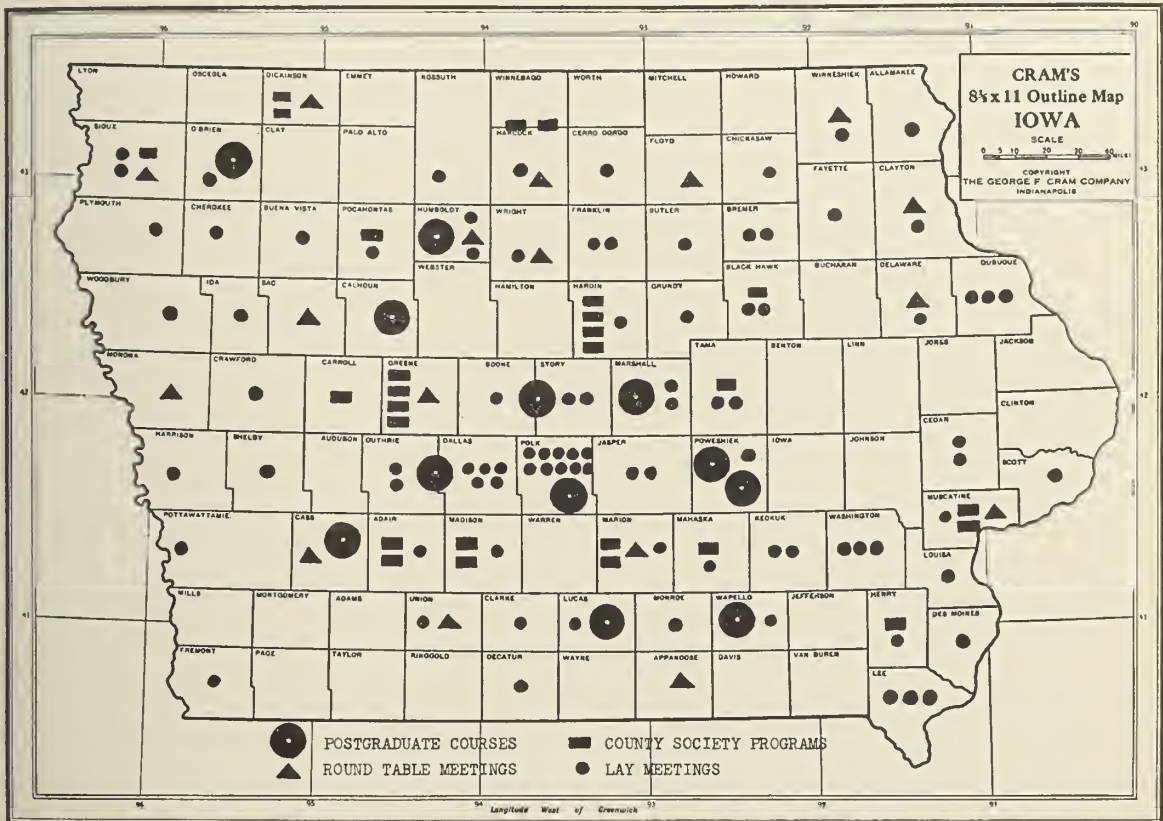
The course in the second district was held in the fall at Humboldt with an enrollment of forty-three physicians from that vicinity who attended each weekly meeting. Word received from the speakers on the course indicated that this was an attentive and interested group. Sheldon was the center for the third district course and the customary large attendance made this one of our better fall courses. Fifty-three physicians were registered for the series of weekly lectures. The fifth district had postgraduate medical courses at Rockwell City, Panora, Des Moines, Ames and Boone. An average of twenty-five physicians attended the course of monthly lec-



tures at Rockwell City, which opened early in the year and was carried over into the fall. At Panora there were thirty-one physicians from that locality enrolled for the fall series of nine weekly lectures. The course at Des Moines had reached its halfway mark at the close of the year. The largest attendance at any of the meetings up to that time was two hundred and two at the November program; however, a much larger attendance is anticipated at the spring meetings. The monthly lectures held alternately at Ames and Boone were all well attended and a group of fifty-five physicians registered for the series. In the sixth councilor district Grinnell was the center for two courses during the year, one

which were held in Chariton, two in Knoxville, and one each in Corydon and Albia. Thirty-one men enrolled for this medical instruction.

A sincere effort was made to procure lecturers for these meetings who would present material for the general practitioner dealing with diagnosis and treatment of the more common conditions. Many outstanding men in the field of medicine were on the programs during the year, including practicing physicians in the state and members of the faculty of the College of Medicine at Iowa City. Out of state physicians were procured from Rochester, Minneapolis, Omaha, Kansas City, St. Louis, Chicago, Madison and Ann Arbor. The Bureau is indeed grateful



in March and the other in October. Each was a series of four weekly lectures held for the benefit of the Poweshiek County physicians. A few physicians from surrounding counties also registered for the instruction. At Marshalltown eight monthly lectures were held, which were attended by approximately sixty physicians from that vicinity. The ninth district held two postgraduate medical courses, one at Ottumwa and the other was held in four centers, Chariton, Knoxville, Corydon and Albia. The course at Ottumwa consisted of eight biweekly lectures, which attracted an exceptionally large group of physicians from the surrounding counties. There were one hundred and thirty-five men registered for the course. In an attempt to reach more physicians in the district the other course was held in four centers. There were six lectures, two of

to all of the speakers for their time and effort spent in making the courses worthwhile and successful.

The round table discussions on prematurity from the obstetric and pediatric standpoint were most successful. During the year seventeen such meetings were held, which covered the state rather extensively. Two hundred and ninety-seven physicians attended the round table meetings, and this figure would have been a great deal larger had the weather been more favorable for some of the meetings. However, reports indicate that this type of instruction is well received by all physicians and affords an opportunity for them to discuss the cases presented as well as individual problems.

The Speakers Bureau was happy to cooperate with the Committee on Child Health and Protection, the State Department of Health, and the State Univer-

sity of Iowa, College of Medicine, in conducting a three-day postgraduate course on the care of the newborn and prematurely born child, which was held in September at the University Hospital in Iowa City. While the enrollment was less than anticipated, those who attended found the course very valuable and worthwhile.

The Speakers Bureau arranged scientific programs for forty-five county medical society meetings during 1940. Seventy-three physicians participated in the presentation of these programs. Toward the end of the year a few county societies asked to use the scientific recordings which the Bureau had made available for their meetings. These transcribed lectures have been recorded by nationally known physicians, and this method of instruction was devised to provide scientific programs for some of the smaller societies who otherwise would be unable to sponsor programs of this caliber. The response from these first few meetings was very gratifying and a rapid advancement of the project is anticipated for 1941.

During the year eighty-nine talks were given before various lay organizations throughout the state. Of this group nineteen were given to women's clubs, ten to Parent-Teachers Associations, fifty-nine to service clubs, and one to a college group.

Fifty-two radio talks were delivered over WOI in Ames and WSUI in Iowa City on our regular weekly broadcasts. The Speakers Bureau furnished copies of these radio addresses upon request, and nine hundred and ninety-three radio listeners, in all parts of the middle west, wrote for this material in printed form.

The presentation of the annual Health Essay Contest, sponsored by the Woman's Auxiliary to the Iowa State Medical Society, again received the cooperation of the Speakers Bureau. "The Road to Health" was selected as the subject for the contest, and an unusually large number of manuscripts were judged. As a guest of the Speakers Bureau, the winner of the contest delivered her essay on the Iowa State Medical Society's radio broadcast.

The Iowa Federation of Women's Clubs requested the Speakers Bureau to assist in arranging their radio programs over Stations KSO and KRNT in Des Moines. Nine programs were planned by the Bureau for the series of monthly talks entitled "Keeping Well Folks Well." The talks covered various phases of health and received many favorable comments during the year.

The accompanying map indicates graphically the accomplishments of the Speakers Bureau for 1940.

Our services have extended to practically every section of the state, as this map reveals. However, the definite progress shown by the Bureau is due to the splendid cooperation and enthusiastic support of the physicians throughout the state.

The financial report of the Speakers Bureau is given, first for the year 1940, and then for the entire period of its existence.

#### Account for 1940

##### Income

Receipts from Postgraduate Courses.....	\$2,935.31
Travel Expense Refund.....	10.00
Refund on Cancer Manual.....	439.00

Total Speakers Bureau Income.....\$3,384.31

##### Expenditures

Salaries .....	\$1,516.25
Travel Expense for Speakers.....	423.40
Postgraduate Course Travel Expense.....	1,708.56
Radio Talks .....	85.35
Stationery, Printing, Telephone, etc.....	472.47
Miscellaneous .....	170.50

Total Speakers Bureau Expenditures....	\$4,376.53
Deficit for 1940.....	\$ 992.22
Funds Received from Iowa State Medical Society to Offset Deficit.....	992.22

#### Account 1930 Through 1940

Year	Disbursements	Receipts	Deficit
1930.....	\$ 306.26	\$ 2,780.00	\$2,473.74*
1931.....	3,949.97	3,939.34	10.63
1932.....	5,855.70	2,805.58	3,050.12
1933.....	3,744.06	3,650.70	93.36
1934.....	4,316.30	4,350.90	34.60*
1935.....	5,435.56	5,151.97	283.59
1936.....	4,360.13	3,431.03	929.10
1937.....	5,741.55	3,042.24	2,699.31
1938.....	5,493.99	3,806.42	1,687.57
1939.....	4,427.95	1,766.75	2,661.20
1940.....	4,376.53	3,384.31	992.22
Total....	\$48,008.00	\$38,109.24	\$9,898.76

\*Balance instead of Deficit.

To depict a fairly accurate picture of the extent of the Speakers Bureau work during 1940, we have assembled the following figures for the various activities. These compilations evidence the progress made in each field of endeavor.

The accompanying figures can show in only a small measure the work which has been done, and can in no way represent the time and effort expended by the physicians of the state to make our work a success.

Joseph B. Priestley, Chairman  
James E. Reeder  
Thomas F. Hersch  
Walter R. Brock  
Sydney D. Maiden  
James Dunn

#### 1940 SPEAKERS BUREAU ACTIVITIES

Number of Round Table Discussions arranged for County Medical Society Meetings.....	17
Number of Medical Talks arranged for Lay Groups.....	89
Number of County Medical Society Programs arranged (Physician Hours of Instruction not determined) .....	45
Number of Scientific Recordings sent out for County Medical Society Meetings.....	4
Number of Radio Talks arranged.....	61
Number of Postgraduate Medical Lectures (2 Hours).....	85
Approximate Number of Physician Hours of Postgraduate Medical Instruction.....	6,788



Dr. Priestley: Mr. Speaker, the report of the Speakers Bureau Committee is complete in the handbook. I would like, however, to call your attention to two things: first, the table which indicates that almost 7,000 hours of postgraduate medical education were given to the doctors in the state, and, second, the record of costs. I should like to *move* that the report as it appears in the handbook be adopted.

*The motion was seconded, put to a vote and carried.*

The Speaker: Cancer Committee.

#### REPORT OF THE EXECUTIVE CANCER COMMITTEE

The Executive Cancer Committee met in the fall in Des Moines, in conjunction with the Board of the Women's Field Army for Cancer Control. Various phases of the Cancer subject were discussed. It was agreed that the cancer educational program of both the physicians and laity should be made as active as possible and should be enlarged.

In line with this thought a committee consisting of Dr. E. D. Plass, Dr. A. W. Erskine and Dr. H. W. Morgan was authorized to investigate the advisability of publishing a manual for medical and lay education and to compile material for the publication, funds for such a pamphlet to be furnished by the Women's Field Army. The Committee has been working on this program since its appointment. In line with the instructions of the House of Delegates at the 1940 meeting, cancer clinics have been established in Linn and Woodbury Counties, and plans are being made to establish three more in Cerro Gordo, Dubuque and Pottawattamie counties. These will be in addition to the clinics at the University Hospital in Iowa City and Broadlawns General Hospital in Des Moines.

The efforts of the Cancer Committee at the present time are being devoted to drawing a bill for the legislature dealing with cancer control in this state, and providing for diagnostic and therapeutic centers in different parts of the state. The proposed bill will be similar to the Georgia law for cancer control in that state.

The advisability of introducing legislation at this time was presented to the Executive Council at a meeting held in Des Moines February 9, 1941. The proposal of the cancer committee was approved by the Executive Council and the necessary steps will be taken to introduce a bill at this session. It will not be sponsored by the State Society but largely by the Women's Field Army and the Executive Cancer Committee. We hope to announce favorable action at the annual meeting.

I am enclosing as a part of this report a statement of the cancer manual committee's activities during the year. This committee consisted of Dr. E. D. Plass, Dr. A. W. Erskine and Dr. F. P. McNamara. As you recall, they published the Cancer Manual of the Iowa State Medical Society. They reported at the 1940 annual meeting that they had sufficient receipts from the sale of the manuals to pay off all indebtedness and leave a net profit of \$122.97. Since that time they have sold an additional 2000 manuals

to the Alabama State Department of Health at a profit of \$60.00, with some isolated sales amounting to \$4.25, with a postal expenditure of \$5.10, leaving a net profit for the year of \$59.15. This added to a credit of \$122.97 previously reported, makes a total credit of \$182.12 as of January 20, 1941, and in the opinion of the Chairman of the Executive Cancer Committee, the Cancer Manual Committee not only did an excellent piece of publishing, but an A-1 job of financing.

In conclusion, I am enclosing the report of the Commander of the Women's Field Army, Mrs. A. V. O'Brien, of Iowa City, who has unstintingly given of her time and efforts in the carrying on of the educational program of the laity in this state, and, who has kindly consented to continue as Commander for this year.

M. C. Hennessy, Chairman  
A. W. Erskine  
H. W. Morgan  
W. H. Gibbon  
D. F. Ward

Dr. Erskine: Mr. Speaker, I have three motions to make. The first is that the report of the Cancer Committee as printed in the handbook with the deletion of "medical and" in line 11 of the report, and "funds for such a pamphlet to be furnished by the Women's Field Army" on lines 13 and 14, be adopted.

*The motion was seconded, put to a vote and carried.*

Dr. Erskine: The Council of the Iowa State Medical Society has voted to approve a project of the Cancer Committee to compile material for a manual on lay education in cancer, with the proviso that the cost of publication and distribution of such a manual be borne by agencies other than the Iowa State Medical Society.

I *move* that the House of Delegates approve the project of the Cancer Committee to compile such material.

*The motion was seconded, put to a vote and carried.*

Dr. Erskine: The third motion is this. The Council, which is the Cancer Committee of the State Medical Society, has also approved and asks the approval, in principle, of the House of Delegates, of the proposal of the Executive Cancer Committee that an effort be made to secure the passage of an act in the next legislature to promote the prevention and cure of cancer, to conduct an educational campaign for cancer control, to authorize the State Department of Health to establish standards for organizing, equipping and conducting cancer units or clinics in various cities of the state, to provide plans for the care and treatment of certain indigent persons suffering from cancer, and to appropriate money to enable the State Department of Health to carry out the provisions of this act.

I *move* that the House of Delegates approve the intent of the Cancer Committee in this proposal.

*The motion was seconded, put to a vote and carried.*

The Speaker: We will now have the report of the Women's Field Army. (No response) May I have a motion for the adoption of the report of the Women's Field Army as printed in the handbook?

## REPORT OF THE IOWA DIVISION, WOMEN'S FIELD ARMY

This report covers a period from December 30, 1939, to December 30, 1940.

The close of the year 1938-39 found us with a personnel of eight vice commanders and several resignations. The greatest problem of the Women's Field Army and one that is constant, is the lack of lay women who are willing to give the amount of time and energy that it takes to develop the big program of education for cancer control.

During the summer of 1939 following the mailing of the financial and activities reports to all the workers and county cancer chairmen, the time was spent building up the personnel and developing new counties. Several trips were made to interview women. By January, 1940, the Iowa Division had thirteen vice commanders, one of the districts having two and another three. They were as follows:

First District—Mrs. Grant W. Dickman, Sumner.

Second District—Mrs. C. Frederick Beck, Mason City.

Third District—Mrs. Walter Vander Wilt, Rock Rapids.

Fourth District—Mrs. R. J. Harrington, Sioux City; Mrs. Arthur J. Claeys, Akron.

Sixth District—Mrs. Wm. H. King, Waterloo.

Seventh District—Mrs. J. W. Ballard, Cedar Rapids.

Eighth District—Mrs. John H. Chittum, Wapello.

Ninth District—Mrs. E. M. Eperson, Ottumwa.

Tenth District—Mrs. C. E. Fiers, Creston.

Eleventh District—Mrs. P. A. Lainson, Council Bluffs; Mrs. Ray Flanagan, Silver City; Mrs. Clarence Vetter, Atlantic.

Fifty-three county captains were appointed, forty-six carried on an extensive program; the other seven fell by the wayside. Seven hundred and forty-three lieutenants made up the Iowa Division family.

Our first Cancer Bulletin made its appearance in February, 1940. Dr. E. D. Plass, professor and head of obstetrics and gynecology at the State University of Iowa, and a member of the Executive Board, is the editor. The second bulletin was published in April, the third in July, and the fourth in October. More than 8,200 copies of the bulletin are distributed over the state. In addition to the thousands of physicians and contributors to the 1939 campaign fund, the mailing list includes the editors of all the newspapers, all libraries in the state, including those of the universities and colleges; all county health nurses; all home demonstration agents; all Home Project Chairmen, and the 4-H Club chairmen. Dr. C. C. Little's 32 page booklet "The Fight on Cancer" was also mailed to all of the 1939 contributors.

To further the educational program six panels of beautifully colored latex models of cancer in various parts of the body were purchased, and are available for exhibition at cancer meetings. These exhibits were shown in 24 counties during the past year. The

Women's Field Army pays transportation in both directions.

The United States Public Health Service and the American Society for the Control of Cancer have developed a new motion picture for lay audiences. "Choose To Live" relates one woman's experience with the personal cancer problem, and points the way for other sufferers to profit by early diagnosis and treatment. The Iowa Division of the Women's Field Army purchased one copy of the film in 35 millimeters; available for showing in movie theaters as a part of the regular program and also two copies of the 16 millimeter size. The latter carries a sound track and can be shown in any 16 millimeter projector equipped for sound reproduction, but not in the ordinary home projection apparatus. Showing time for either the 35 millimeter or the 16 millimeter at usual speeds is about eighteen minutes.

Posters comparing mortality figures for 1939 were made for the Iowa Hospital Association meeting in Des Moines. Maps showing cancer deaths by counties and counties carrying on a Women's Field Army program, charts showing publicity possibilities of radio and newspapers, county health nursing units,

### Statement of Transactions

Balance in Council Bluffs Savings Bank, Jan. 1, 1940...\$4,613.87

#### RECEIPTS

Refund from national organization.....	3.50
1939 Enlistment .....	1.00
1940 Enlistment funds .....	4,784.73
1940 Memorial contributions .....	150.00
District expense money returned .....	109.75

Total .....\$9,662.95

#### DISBURSEMENTS

Balance to National 1939, 30 %....	\$ 14.91
1940 30% to National.....	1,429.53
Organization and campaign	
(a) Commanders' travel.....	\$336.05
(b) Doctors' Travel .....	160.91
(c) District expense .....	751.83
(d) Clerical help .....	277.65
(e) Postage and express.....	168.39
(f) Stationery and supplies.....	210.82
(g) Telephone and telegraph ....	144.62
Bulletins .....	2,050.27
Education .....	1,126.03
(a) Literature and printing.....	693.99
(b) Cancer Models .....	248.26
(c) Films .....	69.31
(d) Projectors and bulbs.....	18.98
(e) Hospital Conference	
Display and expense.....	76.25
(f) Balance Expense	
Mailing fight on cancer.....	29.40
(g) Express on cancer exhibits....	82.11
Miscellaneous .....	1,218.30
	40.74

Total .....\$5,879.78

Balance in Council Bluffs Savings Bank Jan. 1, 1941...\$3,783.07

Mrs. Arthur V. O'Brien, Commander

and home demonstration agents, were also prepared.

On May 20, 1940, at a special meeting of the Scott County Medical Society, Mrs. Josephine Ellis and Mrs. Esther May Heskett, of Davenport, were presented with certificates of membership in the Cured Cancer Club. This marked the birth of the Iowa Cured Cancer Club. Three more names have been added to the list; Mrs. Herbert O. Lyte of Iowa City, Mrs. Emma L. Milner of Sioux City and Miss Helen Hudspeth of Rock Rapids.

One hundred seventy thousand pieces of cancer literature were distributed during the 1940 campaign



and at achievement day meetings, county fairs, and the Waterloo Cattle Congress. Five hundred copies of Dr. F. L. Rector's sixteen page booklet "The Story of Cancer for High Schools" which presents cancer facts clearly and simply, were purchased and distributed to schools in Iowa. Over 4,000 column inches of publicity and several feature stories were given our organization because of the very excellent cancer brochure prepared by Mr. William H. Schultz, director of Public Relations of the State Department of Health.

The educational program of the Women's Field Army was, we believe, more effective the past year. Each district presents a different problem. The experience of the past two years demonstrates that one personal visit by the State Commander is worth many letters and long distance telephone calls.

Dr. Erskine: I move it be adopted.

*The motion was seconded, put to a vote and carried.*

The Speaker: The Tuberculosis Committee, Dr. Painter of Dubuque.

#### REPORT OF TUBERCULOSIS COMMITTEE

The Committee on Tuberculosis for the Council of the Iowa State Medical Society wishes to report on the actions taken and some of the work accomplished during the past year. Following its appointment, this Committee held a meeting in Des Moines at which time a discussion was held as to how the committee might best serve the membership of the Iowa State Medical Society in the program for the eradication of tuberculosis in Iowa. It was realized that the method of approach in the management of many diseases is changing, and that this is especially true of tuberculosis. As a result of this consideration the Committee decided to make every effort to keep the general practitioner informed of the latest methods in the diagnosis, care and treatment of tuberculosis. To attain this end it was decided to request the president of every county medical society in the state to appoint a committee on tuberculosis in each local society. Following out this plan, contact was made with every president by letter, and a large number responded with the appointment of such a committee.

Letters were then sent to the chairman of each county tuberculosis committee in which suggestions for their consideration were made as follows:

1. To stimulate and foster programs and papers on tuberculosis in every medical society in the state during the coming year.

2. To stimulate each county and local society to give the fullest cooperation to all lay organizations who have established an adequate program for the eradication of tuberculosis, and to give all possible assistance to the further improvement of such a program.

The Committee of the Council also expressed its desire to cooperate and assist in every manner possible in the carrying out of the program by the local committees. Many programs on tuberculosis

have thus been instituted over the state of Iowa during the past year, stimulating interest in the problem of the eradication of tuberculosis.

J. Carl Painter, Chairman  
Edward F. Beeh  
Ray J. Harrington  
John Russell  
Herbert E. Stroy

Dr. Painter: As a supplementary report, may I say that practically every county society in the state now has appointed a Tuberculosis Committee, making possible closer contact between the various lay organizations which are working in tuberculosis control and also with the State Department of Health. In the past year we have had reported twenty-two meetings on tuberculosis in various counties. I would like to suggest, if I might, that the delegates carry home the impression to their county societies that this Tuberculosis Committee is very anxious to have programs on tuberculosis in their county societies for the next year.

Dr. Suchomel: I move the report be adopted.

*The motion was seconded put to a vote and carried.*

The Speaker: Committee on Industrial Health.

Dr. Reeder: Unfortunately, Mr. Speaker, this committee was appointed rather late last summer or early fall at the request of our Commissioner of Health, Dr. Bierring, and that is why we do not have a report in the handbook. Your committee has been working with the problems of industrial hygiene in the state and finds this is rather a formidable task. Also, we have discovered it is necessary to correlate the industrial physician, the industrial nurse, the industrial hygienist and the industrial engineer. Due to the rapid expansion of industry in the rearmament program, there is a definite acute shortage of industrial physicians, and the survey shows that there are only about 1,200 qualified physicians, or, in other words, full time physicians doing industrial hygiene work. These are apparently in the larger industries. The minor or smaller industries are the ones which are really suffering from lack of proper supervision in industrial hygiene.

The success of our industries depends to a considerable extent upon the health of the workers in them. Hence, the protection and improvement of the health of approximately 50,000,000 gainfully employed persons, and the many millions directly and indirectly dependent upon them, should be of paramount concern to those entrusted with the health and welfare of this nation. In certain localities nearly the entire population is dependent upon industry, so that the health of the industrial workers in such areas forms an inseparable part of the health and welfare of the community. Furthermore, it is now generally conceded that if we are to advance in the development of physical and mental well-being among workers, we must pay attention not only to the working environment but also to factors associated with conditions outside the work place. It is, therefore, obvious that the health of industrial workers is a matter of concern not only to industry but to the community at large. Thus, industrial

hygiene takes on a new meaning and may be said to be public health applied to gainful workers. Social programs in recent years have increased our awareness of the rôle which illness plays in the causation of disability, dependency and insecurity. In view of the socio-economic implications of illness among workers, and the interdependence of industry and the community in which industry finds itself, it seems that industrial hygiene may offer solutions for many of the problems in public health and social security. Because of the important implications of industrial hygiene and its rapid growth, it appears most fitting and timely that we take inventory of the entire subject, its development, its numerous problems, its progress and its future.

I wish to quote Bulletin No. 259, United States Public Health Service published in 1940 of a survey of the activities in the field of industrial hygiene in the United States. There is a definite increase in the number of official consulting and investigating agencies in this field. State and federal governments, as well as other agencies, are expanding their programs. The range of medical activity in industrial health is so widespread and frequently of such character as to require the services of physicians in many categories of public and private employment. Physicians in industry may be classified according to whether preventive or remedial services preponderate in their ordinary activity. At one extremity are medically trained industrial hygienists, concerned mainly with the elimination of environmental and personal factors underlying lost time in industry; at the opposite end is the private physician in general or special practice, who is most frequently called by employers or insurance organizations to treat individual cases of compensable disability. The industrial physician bridges the space between these two extremes of professional approach. He applies the principles of preventive medicine and surgery in relationship to specific working conditions and also treats accidents and diseases of occupational origin in keeping with the employer's legal responsibility. Physicians in each of these classifications have indispensable functions to perform for industry. The actual share of the total preventive medical activity which industry needs and which these various types of physicians undertake will vary widely with local requirements. In the inevitable expansion of industrial medicine the work of physicians in all these groups must increase greatly. Medical leadership has the responsibility for developing proper orientation in industrial health. From the evidence presented in the survey by the United States Public Health Service, opportunities for constructive services are great.

Since the private practitioner treats all non-occupational causes of lost time and a majority of occupational causes as well, reductions in industrial absenteeism rest largely in his hands. He should extend his acquaintance with industrial exposures and his ability to correct them. He should report injuries and disease promptly to the official agent responsible for their control and he should call on him

for advice and consultation when local facilities for such services are incomplete or absent. Public health administrators should underwrite the programs which our State Medical Society has been called upon to support and develop. Your committee has formulated the following outline of the problem.

1. Absenteeism in employees.
    - a. Reason and cause.
    - b. Causal relationship (if any) to raw materials or by-products.
  2. Pre-employment examinations.
    - a. X-ray in dusty trades.
    - b. Routine blood tests, seeing that positive cases are not dismissed, but are given adequate treatment.
- We are facing an acute problem right now with young men in the draft if they get a positive serology. Twenty or twenty-five million young men between twenty-one and thirty-five years of age have a positive serology and probably cannot get their jobs back. It is up to us to see that that condition is changed. This is just one problem with which we have been confronted in the last few months due to the draft.
3. Physicians report all cases of industrial poisoning or dermatitis, etc., to the State Bureau of Industrial Hygiene, to enable this bureau to assist in finding cause, if necessary.
  4. Education.
    - a. Physicians through articles in journals, etc., symposia, or postgraduate courses, if the demand is signified.
    - b. Course in industrial medicine; recommend State University for those who may be interested in industrial medicine. A survey could be made of men who might be interested in such a course.

There is a shortage of places where you can get this type of training. For example, at Washington, the government has a school for six weeks' training of the individual who is interested in industrial medicine; Harvard has a three months' course, and just recently it has been expanded to Michigan, and I believe Northwestern University. Perhaps Dr. MacEwen might be able to tell us something about that. Iowa is not an industrial state but apparently it is becoming one very rapidly. We only have one full-time industrial physician in the state of Iowa, (at Burlington in the new powder factory) although we do have between thirty and forty part-time industrial physicians.

This committee would recommend that all employers, according to size, have either a full-time physician or appoint one or two competent physicians to examine all employees and care for industrial injuries, these men to be responsible for the health of such employees relative to working conditions. It is emphasized that the industrial physician should not compete with the family physician,



but should limit his extramural practice to such cases as the workmen's compensation and occupational disease laws require of him.

This committee recommends that a permanent committee on Industrial Health be appointed (preferably from the industrial counties of the state, the number to be three or five) to correlate the work of the State Society with the Industrial Department of the State Department of Health, and to assist in working out the divers industrial hygiene problems when called upon by said Department.

James E. Reeder, Chairman  
J. G. Macrae  
C. H. Cretzmeier

Dr. Reeder: I think this is a rather important subject due to the very rapid expansion that is coming. You might ask Dr. Bierring to discuss this. I move the adoption of the report.

*The motion was seconded, put to a vote and carried.*

The Speaker: It has been suggested, Dr. Bierring, that you add a word to this report.

Dr. Bierring: I shall speak with reference to the educational facilities for acquainting our physicians with industrial hygiene and industrial hazards, which seem to be necessary because of the increasing number of defense contracts that are being made here in Iowa in the larger cities, including the Burlington plant, now totaling \$75,000,000. The courses that have been arranged at Harvard and other institutions are two and three months' courses and are hardly practicable at the present time. It would seem that some method should be devised for bringing this instruction directly to our physicians. During the last few days, in conference with the chairman of the committee, a plan has been proposed for the Department of Health to sponsor so-called institutes or daily programs, covering a week, tentatively proposed for the third week in June, of an afternoon and evening program, say, Monday at Burlington, Tuesday at Cedar Rapids, Wednesday at Mason City, Thursday at Sioux City and Friday at Des Moines. The thought is to have two speakers in the afternoon and one in the evening, the speakers to be given a moderate honorarium, plus their travel expense. If such a course develops satisfactorily, another one could be repeated about September first. We would like to have this proposed institute carried out in cooperation with the Speakers Bureau, with the Committee on Industrial Health, and with the medical faculty of the University. There will be no expense connected with it except that which will be assumed by the Department of Health, but we will need the services of the state office, of the Speakers Bureau and of Dr. MacEwen's staff, in order to publicize it properly and enlist interest in this course.

The chairman of your Speakers Bureau suggests that if these addresses or talks are well prepared we will make records of them, which can be used later for smaller audiences or at other periods in this defense period. This is submitted purely as a suggestion, but it seems quite likely that it will receive the approval of the agency which is going to furnish the funds.

Dr. Reeder: May I add one thought to the whole picture. This is rather important, it seems to me. We should get behind this whole program and keep it in the hands of the Department of Health. Otherwise, it is going to get into the hands of the Department of Labor, and the men doing any industrial work know what that will mean. I find that in Connecticut it is under the Department of Health and it functions very satisfactorily. In some states it is not, and it is not as satisfactory operating under the Department of Labor as it is under the Department of Health. Therefore, if we will give this whole thing a boost and get behind it, I am sure we will accomplish a lot more in the next three or four years in Iowa, than we will if we let labor take it over, because labor will tell us what to do.

Dr. Bierring: I think it should be well understood that the Department of Health concerns itself with the preventive side of industrial hygiene. It is willing to offer the facilities of the laboratory and what other facilities it has, but the real work must be done by the practitioners. It is to their interest, because industrial hazards and occupational diseases are going to be a large part of a practitioner's work in the future.

Dr. Braunlich: I was very much impressed this morning with our President's address, particularly that section of it in which he disapproved of more than one examining board in the state of Iowa. I do not like to see our President stick his neck out all alone upon this matter. Therefore, I move that this House of Delegates go on record as approving of only one medical examining board in the state of Iowa.

*The motion was seconded, put to a vote and carried.*

The Speaker: We would like a report from the Treasurer.

#### REPORT OF THE TREASURER

House of Delegates, Iowa State Medical Society:

The financial statement of the Society for the year 1940 is herewith respectfully submitted. The books and accounts of the Society have been audited by a certified public accountant, and his detailed report is on file in the offices of two of the trustees, John I. Marker of Davenport and Lee R. Woodward of Mason City, and the third copy is in the central office. These copies are open to inspection by any member of the Society at any time during office hours.

For the sake of clarity and brevity, a concise financial statement is given below:

#### INCOME AND EXPENSE ACCOUNT

<b>INCOME</b>	
Dues .....	\$22,856.00
Advertising .....	6,573.56
Reprints .....	1,065.69
Miscellaneous .....	87.36
Speakers Bureau	
Fees .....	2,935.31
Travel Expense Refund.....	10.00
Refund on Cancer Manual.....	439.00
Total .....	3,384.31
Annual Session .....	3,496.00
Interest on Savings Account.....	55.18
Interest from Bonds.....	1,393.12
<b>TOTAL INCOME .....</b>	<b>\$38,911.22</b>

## EXPENDITURES

Administrative Miscellaneous .....	\$ 1,140.89
Rent and Office Supplies.....	1,940.43
Stationery and Printing.....	676.67
General Salaries .....	5,142.07
County Society Services.....	32.56
Trustees .....	187.67
Council .....	1,425.96
Medicolegal Committee.....	150.00
Legislative Committee .....	4,500.00
Medical Economics Committee.....	135.69
Other Committees .....	1,013.16
Annual Session .....	3,532.44
Journal Printing and Engraving.....	10,655.46
Reprints .....	908.63
Bank Charges and Bad Check.....	8.83
Total .....	\$31,450.46

## Speakers Bureau

Salaries .....	\$1,640.25
Travel Expense for Speakers .....	423.40
Travel Expense, Postgraduate .....	1,708.56
Radio Talks .....	85.35
Stationery, Printing, Tele- phone, etc. ....	473.47
Miscellaneous .....	45.50
Total .....	\$ 4,376.53
TOTAL EXPENDITURES .....	\$35,826.99

## EXCESS INCOME OVER

EXPENDITURES .....	\$ 3,084.23
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\* \* \*

Investments and total funds are shown in the following analysis and summary:

Net Income for year 1940 .....	\$ 3,084.23
Cash in Banks at beginning of year.....	4,386.27
Treasury Bonds on hand at beginning of year (cost) .....	44,491.09

TOTAL FUNDS .....	\$51,961.59
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## Represented by:

## Cash in Bank:

Bankers Trust Co. (Treasurer's Account) ..	\$ 369.59
Bankers Trust Co. (Secretary's Account).....	400.51
Bankers Trust Co. (Savings Account) .....	3,700.40

Total Cash in Banks.....	\$ 4,470.50
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## Treasury Bonds:

3% Due 3-15-43 (Par Value) .....	\$25,500.00
2½% Due 12-15-53 (Par Value) .....	5,000.00
2¾% Due 6-15-54 (Par Value) .....	5,000.00
3% Due 9-15-55 (Par Value) .....	9,000.00
Less Discount on Purchase of Bonds .....	8.91

Total Treasury Bonds (Cost).....	\$44,491.09
U. S. Savings Bonds (Maturity Value \$4,000.00).....	\$ 3,000.00

TOTAL CASH AND BONDS (As Above).....	\$51,961.59
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Harold J. McCoy, Treasurer

Dr. McCoy: I refer you to the report in the hand-book and move it be adopted.

*The motion was seconded, put to a vote and carried.*

The Speaker: The next order of business is memorials and communications.

Secretary Parker: Mr. Speaker, I have two communications from Sioux City. The Commissioner of Health has a copy of the same communications. They request the approval of two laboratories in Sioux City for serologic examinations relating to the premarital bill. I move, Mr. Speaker, that these communications be referred to the Medical Economics Committee.

*The motion was seconded.*

Dr. Biering: At a luncheon meeting this noon, which your President attended, three representatives of laboratories were present, Sioux City, Davenport and Mason City, besides the five members of the Advisory State Board of Health. This matter was discussed, and it was decided that the manner of approval of laboratories by the State Department of Health should be on the basis of performance tests, with certain other requirements; that the director of the laboratory should be a physician, and preferably a clinical pathologist; and third, that the technicians employed should be certified technicians. It was referred to a committee of seven, comprising Dr. McNamara, the three laboratory representatives and three representatives from the State Hygienic Laboratory of the State Department of Health. They are to meet on May 24th, in Iowa City to outline the plans by which these laboratories will be approved. Therefore, I think the matter, as far as the laboratories are concerned, has been satisfactorily adjusted for the present. They have discussed the economic side. It appears to be satisfactory to the laboratories that standards be set up based upon performance tests and other qualifications.

*The motion was put to a vote and carried.*

Secretary Parker: A communication from the Wapello County Medical Society:

"Whereas, Confusion and waste of funds prevail in many or all counties of the state for lack of comprehensive and equitable unification of laws, rules and regulations pertaining to the care of the indigent sick; and

"Whereas, The principal causes of said confusion and waste of funds can and should be eliminated, without lowering the standard of medical services rendered, or interfering in any way with the flow of clinical material necessary for instructive purposes at the University Medical School; and

"Whereas, The University Hospitals are frequently crowded with cases of little value for teaching purposes, resulting in long waiting lists, not only useless but ridiculous in emergencies; and

"Whereas, The cost of medical or surgical care of such minor cases can be greatly reduced in local hospitals or nursing homes; therefore be it

"RESOLVED By the Wapello County Medical Society that action to attain a more efficient and equitable service be set in motion: first, by restoring to local government the unrestricted care and management of its indigent sick; and second, by the appointment of a county physician in each county, by the County Board of Supervisors, subject to approval by the County Medical Society, who shall



determine what cases shall be referred to the University Hospitals; and be it

"FURTHER RESOLVED, That a copy of these resolutions be presented to the officers and members of the House of Delegates of the Iowa State Medical Society for more fixed and definite consideration."

I move, Mr. Speaker, that this be referred to the Committee on Medical Economics.

*The motion was seconded, put to a vote and carried.*

Dr. Chittum: The following resolution was passed on April 10th by the Louisa County Medical Society in regular meeting. I would like to offer it to the House of Delegates.

"Whereas, The medical men of the United States, as organizations and as individuals have been earnest and loyal, have expended every effort to improve the public health, to assist and forward all efforts toward national defense, serving without compensation, and

"Whereas, The present administration at Washington has met all this with abuse, persecution and prosecution, and

"Whereas, The labor unions, under the leadership of outlaws and communists are performing acts of sabotage and obstruction in industries that are vital to general welfare and to national defense, and

"Whereas, The administration, while persecuting and unjustly prosecuting the medical societies has been so very kind and considerate of the unions, in spite of their lawless acts, acts that are more 'in the restraint of trade' than any other combination in the country, so be it

"RESOLVED, That the Louisa County Medical Society urge the Iowa State Medical Society, the House of Delegates, and all allied groups, to use every possible means to secure just treatment of medical men, at the hands of the powers that be."

Dr. Chittum: I move the adoption of the resolution.

*The motion was seconded.*

The Speaker: You want to move the adoption for what?

Dr. Shane: I move it be received.

Dr. Erskine: I move it be received and placed on file.

Dr. Suchomel: And referred to the Committee on Medical Economics.

Dr. Corcoran: I move that it be laid on the table.

*The motion was seconded, put to a vote and carried.*

Secretary Parker: "The Woodbury County Medical Society, at a meeting held April 24, 1941, passed a motion that its delegates to the House of Delegates of the Iowa State Medical Society place before the House the following resolution: Because it is our understanding that the minimal medical rank in the reserve armed forces of the British and Canadian Governments is that of a captain, that the doctors in our country suffer a severe financial loss by taking active service in our own armed forces and because we feel that their degree of technical skill and training warrants it, the Woodbury County Medical Society hereby recommends that the mini-

mal medical rank in the reserve armed forces of our country be that of a Captain in the Army or a Senior Lieutenant in the Naval Reserve." I move, Mr. Speaker, that this resolution be referred to the Committee on Military Affairs.

*The motion was seconded, put to a vote and carried.*

Secretary Parker: I would like to read the following telegram from Mayor Mark Conkling of Des Moines: "Best wishes for a successful Davenport convention. You know Des Moines is anxious and eager to have you come back here next year. Convention Bureau assures complete cooperation. We really hope you will be with us 1942."

I move it be referred to the Committee on Nominations.

*The motion was seconded, put to a vote and carried.*

Dr. Ellyson: One thing I do not understand with reference to the Medical Economics Committee. I therefore move that the subject of reasonable fees for the taking of blood and the arrangement with the various laboratories be referred to the Medical Economics Committee to report back at the next meeting.

*The motion was seconded.*

The Speaker: Is there any question on it?

Dr. Ellyson: If that is not clear, may I state there have been many questions in our part of the state regarding the establishment of a reasonable fee bill. Some people want to get married in a hurry and pay a private laboratory; others are not in so great a hurry and wish to use the services of the state laboratory. There is a great variance in the subject of blood examinations, both premarital and prenatal. It seems to me we should have a uniform procedure.

Dr. Fay: Would that mean that this House would fix the fee?

Dr. Ellyson: We would not necessarily fix it; we could make a recommendation.

Dr. McBride: As the law reads now, it would be impossible to send a specimen anywhere except to the state laboratory because the county clerk is subject to three months in jail and a fine of \$100.00 if he issues a license on anything but the state laboratory's Wassermann test.

*The motion was put to a rising vote and carried.*

The Speaker: Is there any other new business to come before this House of Delegates?

Dr. McCoy: Mr. Speaker, the Iowa Academy of Ophthalmology and Otolaryngology last fall at Cedar Rapids passed a resolution creating a committee that had the power to consult with R. V. Blair of the Physicians Optical Laboratories to create an emblem or insignia which would designate members of the Iowa State Medical Society who limited their practice to this field of work. The members of the Society who would be entitled to use this insignia would be determined by this committee or a subsequent committee. That committee was appointed at that time, and I was chairman of it. This emblem has been presented to the Polk County Academy and adopted. I will just show it to you. If it is officially adopted by this body, it will be pre-

sented to the Eye, Ear, Nose and Throat Section tonight for ratification. It has already been ratified by the Academy and by the Polk County Medical Society, and the committee has the power to designate who shall have this. Doctors have the privilege of purchasing it for their windows or doors, and they can have electrotypes made for letterheads.

This is merely a step in designating what type of work you are in, and that you are a bona fide member of the State Society. I would like to have this adopted by this body. I *move* that this insignia be adopted as the official emblem of the members of this Society limiting their practice to eye, ear, nose and throat work, as determined by the Academy of Ophthalmology and Otolaryngology of the State of Iowa.

*The motion was seconded, put to a vote and carried.*

Dr. Bernard: I *move* that the Chair be empowered to appoint a committee of three to draft a resolution memorializing Fred Moore, to present at the session Friday morning.

*The motion was seconded, put to a vote and carried.*

Dr. Reeder: I have a suggestion. Our handbook is too large. Here is one of the Indiana House of Delegates. You notice it is small; it is pocket size. Ours are entirely too large. Mr. Speaker, I *move* that the Committee on Publications be authorized, at the next meeting of the House of Delegates, to publish our handbook in this size.

*The motion was seconded.*

Dr. Fay: The reason ours is published in its present size is because the material is set up and goes right into the JOURNAL.

Dr. Reeder: The smaller size is much better.

The Speaker: Gentlemen, you have heard the motion that proposes to change the size of our handbook for the annual session from the size that you have here to about five by seven. The motion is before the House. All in favor signify by saying "aye"; contrary "no". We will have a rising vote. The "ayes" will rise; the "noes" will rise. *The motion is passed.*

The Speaker: Next we will have the election of the Committee on Nominations. You will hold your caucuses and submit your names.

The delegates of the respective districts caucused for the purpose of electing a Committee on Nominations, and the meeting adjourned at six o'clock.

#### HOUSE OF DELEGATES Friday Morning, May 16, 1941

The second session convened in the Blackhawk Hotel at seven-thirty o'clock, Speaker Bush presiding.

The Speaker: The delegates will come to order. We will have the roll call.

Secretary Parker: As I call the roll by counties, will you please stand, announce your name and whether you are a delegate or an alternate from that county?

The Secretary then called the roll.

#### Delegates

Appanoose.....	J. C. Donahue
Audubon.....	W. H. Halloran
Black Hawk.....	E. E. Magee
Boone.....	A. B. Deering
Buchanan.....	F. F. Agnew
Cerro Gordo.....	H. D. Fallows
Cherokee.....	C. F. Obermann
Chickasaw.....	P. E. Gardner
Clayton.....	W. J. McGrath
Des Moines.....	J. T. Hanna
Dickinson.....	T. L. Ward
Dubuque.....	J. C. Kassmeyer
Jasper.....	J. C. Hill
Johnson.....	E. M. MacEwen
Lee.....	B. J. Dierker
Linn.....	T. F. Suchomel
Lucas.....	A. L. Yocom, Jr.
Lyon.....	L. L. Corcoran
Madison.....	I. K. Sayre
Marshall.....	A. D. Woods
Monona.....	E. C. Junger
O'Brien.....	W. R. Brock
Osceola.....	H. W. Paulsen
Pocahontas.....	W. E. Gower
Polk.....	J. B. Priestley
Scott.....	George Braunlich
Story.....	G. E. McFarland, Jr.
Tama.....	A. A. Pace
Van Buren.....	L. A. Coffin
Wapello.....	C. A. Henry
Washington.....	W. L. Alcorn
Woodbury.....	H. I. Down
Woodbury.....	R. H. McBride
Wright.....	R. D. Bernard

#### Alternates

Allamakee.....	J. W. Thornton
Buena Vista.....	H. E. Farnsworth
Johnson.....	W. F. Mengert
Linn.....	H. L. Van Winkle
Polk.....	E. W. Anderson
Union.....	H. G. Beatty
Warren.....	E. E. Shaw

#### State Society Officers

President.....	F. P. McNamara
President-elect.....	E. B. Bush
Secretary.....	R. L. Parker
Trustee.....	O. J. Fay
Trustee.....	L. R. Woodward
Councilor.....	L. L. Carr
Councilor.....	C. H. Cretzmeyer
Councilor.....	F. P. Winkler
Councilor.....	J. E. Reeder
Councilor.....	E. F. Beeh
Councilor.....	C. W. Ellyson
Councilor.....	H. A. Householder
Councilor.....	C. A. Boice
Councilor.....	R. C. Gutch
Councilor.....	J. G. Macrae

Dr. Woods: I rise for information. Will you please announce the number of delegates here this morning, and the percentage? I think that will have a very strong bearing on the business that will come up later.

The Speaker: With your consent, gentlemen, we will read the minutes and announce the number and percentage after that.

The Secretary read the minutes of the Wednesday afternoon session.

The Speaker: If there are no corrections, the minutes will stand approved. Now we will have the figures on attendance.



Secretary Parker: The total registration this morning is delegates, thirty-four; alternates, seven and officers fourteen, making a total registration of fifty-five or 44 per cent. If there are fifty-four registered this morning, a majority would be thirty-eight of the delegates and officers registered.

The Speaker: We will now have the report of the Committee on Nominations.

Secretary Parker: The following delegates comprised the Committee on Nominations of the 1941 Annual Session: P. E. Gardner of New Hampton, H. D. Fallows of Mason City, W. R. Brock of Sheldon, C. F. Obermann of Cherokee, A. B. Deering of Boone, E. E. Magee of Waterloo, H. A. Householder of Winthrop, J. T. Hanna of Burlington, J. C. Donahue of Centerville, E. E. Shaw of Indianola, and W. H. Halloran of Audubon.

#### REPORT OF THE NOMINATING COMMITTEE

The committee met and presents the following nominations:

For President-Elect: George B. Crow of Burlington, James G. Macrae of Creston, and Frank P. Winkler of Sibley.

For First Vice President: James C. Hill of Newton.

For Second Vice President: George C. Albright of Iowa City.

For Trustee: Lee R. Woodward of Mason City.

For Councilor, Fifth District: Edward F. Beeh of Fort Dodge.

For Councilor, Tenth District: James G. Macrae of Creston.

For Delegate to the American Medical Association: R. D. Bernard of Clarion.

For Alternate Delegate to the American Medical Association: E. E. Shaw of Indianola.

Respectfully submitted,

Ernest E. Shaw, Chairman  
A. B. Deering, Secretary

The Speaker: You will prepare ballots for voting on the presidency. I will appoint as tellers Dr. Boice and Dr. Alcorn. Are there any further nominations? If not, the three names submitted are Crow, Macrae and Winkler for President.

The members proceeded to cast their ballots. The ballots were collected, and the tellers proceeded to tally them.

The Speaker: Dr. Winkler received a majority of the votes cast, which constitutes election. (Applause)

Dr. Boice: Would it be in order, Mr. Speaker, to make a motion that the vote for Dr. Winkler be made unanimous? I so move.

*The motion was seconded, put to a vote and carried.*

Dr. Suchomel: Mr. Speaker, I move that the By-Laws be suspended and the Secretary be instructed to cast a unanimous ballot for those present in voting for the remainder of the candidates submitted by the Nominating Committee.

*The motion was seconded, put to a vote and carried.*

Secretary Parker: The ballot is so cast.

The Speaker: They are elected. Dr. Winkler, I will ask you to resign from the Council now.

Dr. Winkler: Gentlemen, I assure you this is very greatly appreciated by me, and I consider it a very great honor. I also want to assure you of my very best services in the years to come. I will serve you to the best of my ability. At this time, Mr. Speaker, I want to present my resignation as Councilor for the Third District.

Dr. Fay: I move it be accepted.

*The motion was seconded, put to a vote and carried.*

The Speaker: The Nominating Committee will reconvene and submit a new name from the Third District.

Dr. Shaw: The Nominating Committee would like to have the advice of the delegates from the Third District as to the man they would choose.

The Speaker: Will the members of the Third District gather in the rear of the room with the Nominating Committee?

Dr. Bernard: I hereby offer my resignation as alternate delegate.

Dr. Fay: I move that the resignation be accepted.

*The motion was seconded, put to a vote and carried.*

The Speaker: The Nominating Committee will have to nominate a name for that office.

The Nominating Committee, with members from the Third District, withdrew from the meeting.

The Speaker: I think we will start with the reports of committees now.

Dr. Suchomel: Isn't it customary for the Nominating Committee to submit the next place of meeting?

Secretary Parker: No.

Dr. Fay: I move, Mr. Speaker, the next place of meeting be Des Moines, Iowa.

*The motion was seconded, put to a vote and carried.*

The Speaker: We will start with the reports of the committees.

Dr. Fay: As chairman of the committee appointed to prepare a memorial to Dr. Fred Moore, I have here a brief statement which our committee has approved. The published tributes are more elegant than anything we can produce, but what we say comes from the bottom of our hearts, and I believe that will hold true for all of us in session today. I offer the following:

"The House of Delegates of the Iowa State Medical Society in regular session takes formal notice with keenest sorrow and regret of the passing of our esteemed friend and co-worker, Dr. Fred Moore of Des Moines. The place he occupied in this organization will be difficult to fill. We extend to his family our sincerest sympathy."

*It was moved and seconded that the memorial be approved, and the motion carried.*

The Speaker: Is the Committee on Constitution and By-Laws ready to report? (No response) Is there anyone to report for the Committee on Medical Education and Hospitals?

Secretary Parker: While we are waiting for the announcement of this report, I wish to read a communication. "On authority of the Executive Council of the Iowa State Medical Society, the President appointed a committee to judge the scientific ex-

hibits and to bring before this House the names of the exhibits deemed outstanding. The President appointed a committee of three to do this judging. The committee reviewed the exhibits, and announces that in its opinion, the three named below are of exceptional merit. The names are as follows: Dr. Arthur Steindler of Iowa City, Dr. F. P. McNamara of Dubuque and Dr. Richard F. Birge of Des Moines." I might say, Mr. Speaker, that even the President of the American Medical Association said that the scientific exhibits, as far as quality, compared very favorably with the scientific exhibits of the American Medical Association.

The Speaker: The Nominating Committee recommends the following names:

For Councilor of Third District: James B. Knipe of Armstrong.

For Alternate Delegate: George Braunlich of Davenport.

Dr. Shaw: Mr. Speaker, I *move* that the rules be suspended and the Secretary be authorized to cast the unanimous ballot for these two names.

*The motion was seconded, put to a vote and carried.*

Secretary Parker: The ballot is so cast.

The Speaker: I declare these gentlemen elected. We want a report from the Medical Economics Committee, Dr. Shaw.

Dr. Shaw: The Medical Economics Committee considered the two matters referred to it by the House of Delegates and makes the following recommendations. The first question was in regard to laboratories making premarital Wassermann tests. Inasmuch as representatives from the laboratories interested in this matter have arranged to confer with the representatives of the State Department of Health and the State Hygienic Laboratories, in an effort to reach a satisfactory solution to this question, the committee recommends that the decision be left to this group. In case it is unable to reach a settlement, the matter can then be further considered. This group has already conferred, has appointed a committee and has made definite arrangements for a meeting the latter part of this month to consider the matter. Inasmuch as it is their question and the laboratories are represented, we felt we should let them deal with the problem rather than have the House of Delegates decide it without knowing the matters involved. Mr. Speaker, I *move* the adoption of the report.

*The motion was seconded, put to a vote and carried.*

Dr. Shaw: The resolution of the Wapello County Medical Society presented by Dr. C. A. Henry regarding the methods of approving commitments to the University Hospitals at Iowa City by the county societies was discussed. The present study being made by the Medical Economics Committee includes a study of the methods of controlling commitments and, when completed, will contain a recommendation as to the preferable methods of handling this matter. One of the questions we included in the questionnaire and on which we received answers from some fifty counties, was in regard to the use of the commitments and the manner in which they

were handled by the county, whether patients were merely committed by a doctor because he wanted to dispose of them, or whether the county society had some method by which it tried to regulate commitments, either on the basis of value for teaching and/or the economic factor in regard to handling a difficult or mild case. We find in the study that at least half the counties reporting, and probably more, have an arrangement whereby some committee of the county medical society passes on all commitments to Iowa City from the standpoint of teaching value, the services demanded by the patient, and the cost it might entail to the county. A recommendation will undoubtedly be made as to the method of handling the matter. Therefore we recommend that this be referred to the committee for further study in connection with the survey now being made. I *move* the adoption of the report.

*The motion was seconded, put to a vote and carried.*

Dr. Shaw: A third matter under consideration by the committee was in regard to the charges to be made for the premarital examination for communicable syphilis. It was deemed unwise for the State Society through its House of Delegates to set a definite fee for this service. It is recommended that each county society discuss the matter and consider a suggestion that the minimum fee charged in that county for a similar service to a private patient be the fee charged for this service. In case the blood test is positive, the charge to be made for a further examination to determine whether the disease is in a transmissible stage would depend upon the judgment of the physician making the examination. We felt it was definitely unwise for the House of Delegates to set fees under any circumstances. I believe it has never done so. Dr. Bernard mentioned the fact that if fees were made excessive, that fact would be used as the basis for procuring the passage of a contrary law at the next legislature. Furthermore, if the doctors charge a flat fee of \$5.00 or \$10.00 a couple, the greatest trouble would not necessarily lie in having the bill rescinded, but in the bad feeling which would accrue against the medical profession. That was one reason the fee limit was suggested before. There are some doctors who might be money-grabbers. We feel that the danger would be more in the reactions against the medical profession than against the bill, and we feel it would be wise for every county to make the charge the same as the minimum private patient fee. That fee varies definitely. Several counties have had meetings and have set a fee of \$2.00 and some have set one of \$3.00. Evidently, so far, the counties are fixing it at what seems to us a most reasonable fee. It is dependent upon the size of the county. I *move* the adoption of the report.

*The motion was seconded, put to a vote and carried.*

The Speaker: Are there any other items of unfinished business?

Secretary Parker: No unfinished business.

The Speaker: Any new business?

Dr. Brock: I believe the House of Delegates took



action upon a motion in regard to the numerous examining boards for those who wish to practice medicine in Iowa. That was not a very classic presentation and I wish to present this, which is more classic in form. It comes from the recommendation of some of our higher officers:

Whereas, The Iowa State Medical Society, in co-operation with the Council on Medical Education of the American Medical Association, the Federation of State Medical Boards, the American Association of Medical Colleges, the Carnegie Foundation for the Advancement of Teaching and other recognized bodies interested in education, has raised the standards of medical education and practice to its present high level in Iowa, and

Whereas, Cults without standards which have been approved by any recognized educational organization are constantly endeavoring by political methods to expand their forms of practice beyond their fields as they have been legally defined and in effect are striving to enter the practice of medicine as generally recognized without adequate training, and

Whereas, This is obviously detrimental to the public welfare; be it

RESOLVED, That the House of Delegates in regular session express its objections to this method of lowering the standards of the care of the sick in the state of Iowa; and be it

RESOLVED, That as a remedy for this undesirable situation, the House of Delegates of the Iowa State Medical Society shall endeavor by every legitimate means to have the present multiple boards of examination for applicants who desire to diagnose and treat disease abolished, and be it

FURTHER RESOLVED, That it shall by the same means strive for the establishment by law of a single board of examiners who in the future shall pass upon the qualifications of every person who desires to treat sick people in Iowa regardless of what term or terms are used in defining a particular form of practice.

Mr. Speaker, I *move* that this resolution be adopted by the House of Delegates.

*The motion was seconded.*

Dr. Bernard: Mr. Speaker, I do not know who will be members of the next Legislative Committee, but I have had seven or eight years of activity on this committee. This resolution is very well worded. I want to call your attention to the fact that it recommends to the committee that some action be taken. Mandatory resolutions passed by the House, obligating any committee for action two years in the future, are definitely harmful. No one knows two years in advance what the situation may be in any group, our own in particular. Consequently, you place a committee in a very embarrassing position in asking it to force certain types of legislation through the legislature because of an action taken two years previously. As I say, this is not a mandatory resolution. For your information, I think you should know that this committee, for some six or seven years, has had this in mind.

The Speaker: Gentlemen, the question before the House concerns this motion that has been stated by Dr. Brock. Any further remarks or questions? As I understand the import of your report, this does not instruct you but suggests.

Dr. Bernard: That is it. It is very happily worded.

*The question was called for, put to a vote and carried.*

Dr. Boice: Mr. Speaker, I wish to present for the consideration of this House the name of Dr. Charles R. Russell of Keosauqua for life membership. Since 1906, to my knowledge, Dr. Russell has been an active member of the Van Buren County Medical Society, being secretary practically all of that time. Dr. Russell is now completely and permanently disabled. I *move* that Dr. Russell of Keosauqua be granted life membership in the Iowa State Medical Society. This has already been approved by his county medical society.

*The motion was seconded, put to a vote and carried.*

Dr. Ellyson: Mr. Speaker, I have canvassed the applicants for life membership in the Sixth District and the names I wish to present are: Dr. F. T. Launder of Garvin, Tama County, and Dr. T. L. Chadbourne of Vinton, Benton County, both retired. I *move* that they be accepted for life membership.

*The motion was seconded, put to a vote and carried.*

Dr. Reeder: I wish to report that the Sac County Medical Society has voted life membership to Dr. F. T. DeWitt of Nemaha and makes application for life membership for him in the State Society. I *move* he be granted life membership.

*The motion was seconded, put to a vote and carried.*

The Speaker: Is there any other new business?

Secretary Parker: For several years I have been very desirous of organizing a Fifty-Year Club in Iowa. We have thirty-five doctors who have practiced more than fifty years. It is not necessary to read their names, but I would like to complete the organization of that club. In order to do so, I must have an appropriation to carry out the procedure. I would like to ask this House to recommend to the Board of Trustees an appropriation, not to exceed \$150.00, to carry out this program. It is my desire to issue a button, of which I have patterns, and also a certificate. It has been my observation in other states that a certificate issued by the State Medical Society complimenting a doctor on his fifty years of service is more highly prized than any life membership. I will read a copy of the certificate which I wish to have struck off for this purpose:

"The Iowa State Medical Society is desirous of paying special tribute to all physicians in Iowa who have been in the practice of medicine for fifty years or more. The Society therefore has organized the Fifty-Year Club, and all members of the Iowa State Medical Society who graduated in 1891 or prior to that date, and those fifty-year men not active society members but who are recommended by their local county medical society are eligible for membership.

"We propose to keep a separate card index registry of the Fifty-Year Club members in the office of the State Society, and this shall be maintained as a permanent organization, without dues, meetings or other obligations.

"We desire to offer you our sincere congratulations as a member of the Fifty-Year Club, and it is our hope that you will continue to be useful to humanity in the future as you have been for many years in the past."

This certificate will be signed by the President and the Secretary of the State Medical Society. It is my purpose to have the councilor in a district in which a fifty-year man resides present the certificate and badge at an appropriate meeting, either in connection with service clubs or in connection with the district meeting. I think the Councilor of that district should function in the honoring of that man. So I would ask this House to approve such a program and recommend that the Board of Trustees appropriate a sum not to exceed \$150.00 for the continuance of the program. I so *move*, Mr. Speaker.

*The motion was seconded, put to a vote and carried.*

The Speaker: Is there any other new business to come before this House of Delegates?

Dr. Obermann: I have no resolution to offer on this but I would like to make a few remarks to this group. I feel that this group should have its attention called again to the situation in the state hospitals, where our standards of care are below the ideal. I feel that the Society perhaps is not as much interested in our problems as it might be. This morning you have shown interest in the University Hospitals where the physical diseases receive care, but I would like to call your attention to the fact that there are some 6,000 mentally ill patients in this state. I feel that maybe you have forgotten about them because you are not very active in trying to help us raise these standards. The superintendents and staff have to fight more or less alone, as far as the medical profession is concerned, in trying to improve those standards of care. We have made some headway the last few years with increased appropriations. We feel the Society should be interested in the problem and should help us. The fact that there are between six and seven thousand mentally ill patients in the state makes it a problem for all of us. All of these patients were formerly your patients, before they were sent to us.

The Speaker: Are there any other remarks on this subject?

Dr. Shaw: I would like to ask a question in regard to Dr. Obermann's remarks. Would it not be wise to have the Legislative Committee of the State Medical Society cooperate with this medical group in an effort to improve, through legislation, if necessary, the condition of these mentally ill patients? I rather think it has been our policy to do so, but I think it might be well to authorize further cooperation from that standpoint.

The Speaker: Is there any more new business to come before the House of Delegates?

President McNamara: As the retiring President, I wish to thank the members of this House of Delegates for their fine cooperation and the many, many acts of courtesy they have shown me during the past two years. It is through your activity that the State Medical Society becomes powerful, and each year I think we all get a thrill at the seriousness of this meeting. Just a word of thanks to each member.

The Speaker: We will announce the committees at the eleven o'clock hour of the general session in the Main Ballroom. If there is no other business, I will entertain a motion for adjournment.

Dr. Fay: I *move* we adjourn.

*The motion was seconded and carried, and the meeting adjourned at eight forty o'clock.*

## THE CLEVELAND MEETING

(Concluded from page 289)

begun a year ago at the New York Session when the medical profession declared itself ready to cooperate in every possible way with the government in preparing for the national emergency. The need for greater cooperation with other American nations was recognized by the decision to make the Atlantic City meeting a Pan American session in which the other nations will be asked to participate. The need for maintaining standards of medical education was stressed, and the Council on Medical Education and Hospitals was further asked to provide leadership for the various examining boards in the specialties in order to make certain that the boards worked for the public good and the advancement of medical science.

Seen as a whole, the Cleveland meeting was a brilliant testimonial to the integrity of the medical profession, to its ability to see its responsibilities in an harassed world, and to its desire for the advancement of medical science in the face of many difficulties.

## THE OFFICIAL ISSUE

This issue of the JOURNAL carries the Minutes of the Ninetieth Annual Session, the Transactions of the House of Delegates, and the roster of members of the Iowa State Medical Society in good standing as of June 25, 1941. Save this JOURNAL for future reference.



# SPEAKERS BUREAU ACTIVITIES

## SPECIAL INSTITUTES ON INDUSTRIAL HEALTH

We were pleased to see the extensive interest taken by Iowa physicians in the Special Institutes on Industrial Health as evidenced by the large number of cards returned to this office indicating physicians who were planning to attend. These Institutes were held in the following cities:

Burlington .....	June 23
Cedar Rapids .....	June 24
Mason City .....	June 25
Sioux City .....	June 26
Des Moines .....	June 27

They aroused considerable interest among the medical profession, as well as local employers who are becoming increasingly aware of the rôle played by medicine in their particular industry. These Institutes are somewhat of a departure from our past types of postgraduate medical instruction in that they have both afternoon and evening sessions which present in a concentrated form various aspects of more or less one subject from several different viewpoints. It is hoped that similar institutes may be arranged for other cities in Iowa within the year. These Institutes were made possible through the co-operation of the Iowa State Department of Health and the Iowa State Medical Society.

## WEEKLY RADIO BROADCASTS

Since many of you listen to the weekly medical broadcasts sponsored by the Iowa State Medical Society over Station WSUI in Iowa City on Tuesdays at 2:30 p. m., and over Station WOI in Ames on Wednesdays at 2:05 p. m., you no doubt have observed that organ music was added to the program over WOI during the past five months. We feel that this, together with general improvement in the presentation, has considerably increased the listening appeal of these programs.

This is evidenced by the fact that during the entire year of 1940, 993 persons requested copies of one of the weekly broadcasts, and during the first five months of 1941 we received similar requests from 829 listeners.

It is likewise interesting to note that since the introduction of a paragraph on each broadcast emphasizing the high incidence of smallpox in Iowa we have received over 250 requests from our listeners seeking additional information on smallpox. All of these people have been sent the bulletin on smallpox prepared by the State Department of Health, together with a letter designed to give them information concerning these medical broadcasts sponsored by the Iowa State Medical Society.

If the doctors throughout the state would occasionally mention these programs and the days and times when they are broadcast, our listening audience could be greatly increased. Your cooperation in this respect will be appreciated.

## SPIRIT LAKE POSTGRADUATE MEDICAL COURSE

The July meeting of the postgraduate medical course in Spirit Lake will be held at the Antlers Hotel in Spirit Lake on Tuesday, July 15, at 6:30 p. m. Two guest speakers will appear on the program at this time. Dr. James E. Reeder of Sioux City will discuss Common Diseases of the Ear, Nose and Throat, and Dr. James E. Reeder, Jr., also of Sioux City, will speak on Ophthalmology. The local program chairman, Dr. F. L. R. Roberts, urges the physicians in the surrounding counties to be present for this interesting meeting.

## BOONE-STORY POSTGRADUATE MEDICAL COURSE

The meeting of the Boone and Story County Medical Societies scheduled for June 26 was postponed until July 29, at which time it will be held at the Ames Country Club. Dr. Harvey S. Allen of Chicago, who was to speak at the June meeting, will be on the program at that time along with another guest speaker. The first lecture will begin at 5:00 p. m., followed by dinner at 6:30 p. m. and the second lecture at 7:30 p. m. This will prove to be one of the outstanding meetings of the year and every physician in that territory will want to be present for these lectures.

## SUMMER MEETING—UPPER DES MOINES MEDICAL SOCIETY

The annual summer meeting of the Upper Des Moines Medical Society will be held at Templar Park on Spirit Lake Thursday, July 10, with the following program:

### Morning Program 9:00 a. m.

Sound Picture—Studies in Human Fertility

Ortho Products, Inc.

Pathology of Intestines—Colored Slides

Harold W. Morgan, M.D., Mason City

Roentgen Diagnosis of Intestinal Conditions

Allan B. Phillips, M.D., Des Moines

Medical Preparedness

Roy W. Fouts, M.D., Omaha

Dinner 12:30 p. m.

### Afternoon Program 2:00 p. m.

Common Diseases of the Lower Intestinal Tract

William D. Paul, M.D., Iowa City

Traumatic Injuries of the Face

John B. Erich, M.D., Rochester

Acute Surgical Conditions in the Abdomen

George H. Scanlon, M.D., Iowa City

Treatment of Nervous Indigestion

Walter C. Alvarez, M.D., Rochester

Increased Risk of Patient Flying at High Altitude

W. R. Lovelace, M.D., Rochester

# WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*  
5822 North Waterbury Road, Des Moines

*President*—MRS. W. R. HORNADAY, Des Moines

*President Elect*—MRS. F. W. MULSOW, Cedar Rapids

*Secretary*—MRS. M. J. MOES, Dubuque

*Treasurer*—MRS. A. E. MERKEL, Des Moines

## Reports of Officers, Committee Chairmen and Presidents of County Auxiliaries

### REPORT OF THE PRESIDENT-ELECT

Your president-elect also served as chairman of the organization committee. My co-workers were the four vice presidents, each serving in her own district.

Early in the fall all necessary materials, maps and pamphlets were sent to the committee members for their use in organization. Five hundred letters were sent to doctors' wives throughout the state, explaining our Auxiliary work and plans. Our Auxiliary News page was enclosed in these letters. In addition, 110 personal letters were written.

In November I met with the Hardin County ladies in Ackley. Organization was completed and officers elected. On February 11, I accompanied Mrs. Warren to Davenport to plan the state meeting. In April I met with the ladies of Boone and Story Counties and presented our program and objects. The ladies voted to organize when permission is granted by the county medical society.

During the year we have organized auxiliaries in Adair, Greene, Hardin and Worth Counties, and one in the Upper Des Moines District, composed of Clay, Dickinson, Emmet and Palo Alto Counties.

Mrs. W. R. Hornaday, President-Elect.

Fayette, Greene Guthrie, Jackson, Johnson, Linn, Louisa, Madison, Marion, Marshall, Mills, Palo Alto, Polk, Pottawattamie, Scott, Story, Tama, Union, Van Buren, Warren, Washington, Webster, Woodbury and the Northwest Iowa Unit.

The Auxiliary was happy to have as guests Mrs. C. E. Sanders of Kansas City, Missouri, and Mrs. J. H. Martin of Gamboa, Canal Zone.

The State Registration Chairman wishes to express her gratitude to Mrs. Douglas Brown and her assistants and also to the Chamber of Commerce of Davenport for so ably assisting with the registration.

Mrs. E. J. Harnagel, Chairman.

### REPORT OF THE TREASURER

Balance on hand April 30, 1940.....	\$172.86
Receipts May 1, 1940 to May 1, 1941....	\$423.50
Disbursements May 1, 1940 to May 1, 1941 .....	273.33

Net Income for the year.....	150.17
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Balance on hand May 10, 1941.....	\$323.03
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Mrs. Jay C. Decker, Treasurer.

### REPORT OF THE REGISTRATION COMMITTEE AT THE 1941 MEETING

On the morning of May 14, 1941, at nine-thirty, registration for the Thirteenth Annual Convention of the Woman's Auxiliary to the Iowa State Medical Society began at Hotel Mississippi in Davenport, Iowa, ending the following day with eighty-one women registered from outside Davenport. About forty of these were members of some county auxiliary and thirty-nine were non-members; twenty-seven local women and two visitors boosted the total registration to one hundred eight. Those registered represented the following counties: Appanoose, Buchanan, Butler, Calhoun, Cerro Gordo, Clayton, Clinton, Dallas, Delaware, Des Moines, Dubuque, Emmet,

### REPORT OF THE PROGRAM COMMITTEE

Early in the fall the program committee was entertained at luncheon by the president, Mrs. E. T. Warren. At this time the subject, Modern Trends in Medicine, was chosen around which a study program should be built. The following topics were listed: anesthesia, tuberculosis and pneumonia, quackery, social diseases, socialized medicine, cancer, child welfare and maternal health and illusive fevers. The aim was to provide a group of short outlines which studied as a whole or in part would keep members up to date along medical and health lines. To help in the study of the program, a bibliography of some of the material available from the Iowa State Medical Library and the Iowa State Traveling



Library was published in the October issue of the Woman's Auxiliary News. On the subject of Child Welfare and Maternal Health, an outline was prepared by Mrs. James E. Dyson. Two articles on this subject also appeared in May, *The Only Child*, by Mrs. Henry G. Decker, and *Child Guidance Clinics* by Mrs. E. T. Butterfield. On the topic, *Socialized Medicine*, a study was prepared by Mrs. E. E. Shaw.

The Book Notes by Mrs. Keith Chapler appeared in each issue and presented thirty-four of the best essays, biographies, autobiographies, histories and works of fiction of interest to the lay reader. Each month a *Do You Know* column by Mrs. E. E. Shaw presented pertinent facts regarding health conditions in our state and nation. Thinking that some groups might wish to use last year's subject, *Mental Hygiene*, a letter by Mrs. Henry G. Decker showing how a lay group used suggestions from that program was published in September. In addition an article on *Mental Hygiene* by Mrs. E. T. Butterfield appeared in March and April.

A catalogue of the pamphlets and loan material available from the Bureau of Health Education of the American Medical Association, and one hundred fifty posters of the radio broadcast, "Doctors at Work", were sent to county auxiliary presidents for distribution. Two form letters and program material, when requested, were sent to county presidents by the program chairman.

Questionnaires show that most auxiliaries have a few educational meetings; ten have used the program part of the time; two have used it each month. Because a few auxiliaries meet only when the doctors meet, it is difficult for them to have a planned program because these counties do not convene regularly. Farm Bureau groups in three counties used part of the suggested program and two panel discussions for Parent-Teacher health programs were prepared from our materials. Through the Public Relations Committee the program has been brought to the attention of educational publications in Iowa.

The chairman greatly appreciates the helpful guidance of the president, Mrs. E. T. Warren, and the fine cooperation given by each member of the program committee.

Mrs. A. G. Felter, Chairman.

#### REPORT OF THE PUBLIC RELATIONS COMMITTEE

"The true worth of an organization is shown by the objects it pursues". The function of public relations is to bring about a better understanding between the public and the medical profession—a very worthy object. It cannot be emphasized too strongly that there should be concerted effort on the part of every doctor's wife to make clear to all lay groups to which she belongs, "the ideals and possibilities of the medical profession".

This year the theme, "Prepare Yourself" was suggested and a ten point program was presented in the hope that at least a part of it could be applied

to local groups. That program appeared in the October Auxiliary News. A summary of activities shows that six counties cooperated in the health essay contest; five counties used the Speakers Bureau; six counties planned health programs for lay groups; and five counties have only social meetings. Six counties with a total membership of 142 have 73 members belonging to the Women's Club, 42 belonging to the Parent-Teacher Association, 20 active in Camp Fire and Girl Scout groups, 14 belonging to the Legion Auxiliary and five active in Y. W. C. A. work.

County auxiliaries and individual members have promoted public relations activities in the following ways: one county sponsored a talk by a doctor on "Diet" for a lay group; four counties assisted in the cancer control programs; one county planned a talk on social diseases for a rural group; a number have placed *Hygeia* in their public schools and libraries; one member gave talks on preventive medicine before lay groups; one county carried out an educational program with the dentists' wives as guests; and one county assisted in conducting an x-ray clinic. One member is state president of the Parent-Teacher Association, one is chairman of the Division of Public Health of the Iowa Federation of Women's Clubs, one is a member of the Committee for Better Education and is secretary of the Association of School Boards, one is active on the Social Welfare Board, and another on the Visiting Nurses Board, and a number hold important offices in the Association of University Women.

Mrs. W. A. Seidler, Chairman.

#### REPORT OF THE LEGISLATIVE COMMITTEE

We are, as you perhaps know, asked by the Iowa State Medical Society not to take the initiative in matters of legislation but rather to await their instructions and advice as to procedure. We have had no such instructions this year. During the past legislative session there were, however, some bills which I feel would be of interest to the Auxiliary. They are as follows:

Senate File No. 2, a bill requiring a physical examination by a physician as a prerequisite to obtaining a marriage license is now the law. The amount of the physician's fee to be charged for the examination was eliminated in the final consideration and passage of the measure.

Senate File No. 265, to permit payroll deductions by employees of public institutions so that they may have group membership in a non-profit hospital service plan, has been signed by the Governor and will become the law on July 4, 1941.

House File No. 135, relating to the taking of a blood specimen of persons arrested for offenses involving intoxication while operating a motor vehicle on the highway, was passed by the House but defeated by being retained in the Senate sifting committee. The object of this bill was good, but it got in serious trouble with various peace enforcement

officers, and was a difficult bill to place in satisfactory form to comply with the rules of evidence and practice and procedure of the courts. The constitutionality of the bill as passed by the House was seriously questioned and this was one of the principal reasons for the measure not being considered by the Senate.

House File No. 511 was introduced by the Public Health Committee, to require vaccination and immunization against contagious diseases by first term school children. This bill was sponsored by the Department of Public Health but was introduced late in the session and was not considered until the closing days when it was defeated by a close vote in the House. This bill has merit and could have received favorable consideration had it been introduced earlier in the session. Mrs. Charles Ryan, Chairman.

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### REPORT OF HYGEIA COMMITTEE

As chairman of the Hygeia Committee of the Auxiliary to the Iowa State Medical Society, it has been an honor and a privilege to help in the promotion of the distribution of *Hygeia*. While a larger number have subscribed for *Hygeia* and a greater enthusiasm has been shown we realize there are many more who should be using the valuable material found in each copy of this health magazine.

Some auxiliaries reported placing *Hygeia* in public schools and libraries and increased health activity has resulted. In schools competing in the health essay contest *Hygeia* has been found a beneficial source of reference. The quota for Iowa is 340 and we have received credit for 142 2/12 subscriptions. There were many more who subscribed to *Hygeia*, but since there was no request that the Auxiliary be given credit we cannot include them in this report. Of the twenty-seven organized counties only seven have *Hygeia* credits; Cass, Dallas, Guthrie, Jackson, Dubuque, Muscatine, Polk and Pottawattamie. Dubuque County, with Mrs. Walter Cary as chairman, was one of the six county units in the United States to receive honorable mention from the National Auxiliary.

Your chairman has sent two letters to each auxiliary and received replies from seven. Several sample copies of *Hygeia* were used to introduce the magazine to those unfamiliar with it and in some instances resulted in securing new subscriptions. We wish to express our appreciation to Mr. F. V. Cargill, circulation manager, for sending the material used in the Hygeia exhibit at our state meeting. Mrs. H. F. Clark, Chairman.

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### REPORT OF THE HEALTH ESSAY CONTEST

The detailed report of the Eighth Annual Health Essay Contest, sponsored by the Woman's Auxiliary to the Iowa State Medical Society and the Speakers Bureau of the Iowa State Medical Society, as published in the May, 1941, Auxiliary News, was presented at the annual meeting. Inasmuch as the material has already appeared in print, it will not be reproduced here. Mrs. W. A. Seidler, Chairman.

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### REPORT OF THE EXHIBITS COMMITTEE

The Exhibits Committee met with the president, Mrs. Warren, early in March, 1941, to discuss the possibilities of an exhibit of Iowa activities. On March 29, letters were sent to all county presidents, requesting a report on the various activities engaged in by the individual auxiliaries. Four responses were received.

The exhibits committee is aware of the inspiration which has caused each officer to give of her time, her talent and her effort to the year's work. The committee is also aware of the difficulty in presenting evidence of this effort. The exhibit is a collection of communications, Auxiliary News reprints, a map of organized counties and a poster depicting the activities of the various auxiliaries. Mrs. H. B. Woods, Chairman.

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### REPORT OF COMMITTEE ON PRINTING

At the request of our president the following printed matter was ordered to conduct the business of our organization: 1000 letterheads, 1000 envelopes, 1000 membership cards, and 500 additional letterheads with special printing thereon for use by the president and the secretary. Bids for this printing were submitted by local printers and the contract was awarded to Lawrence Printing of Council Bluffs, which submitted the lowest bid. Total cost of above printing was \$21.99.

It has been a distinct pleasure to perform this minor task for the good of our organization and it has been a greater pleasure to cooperate with our president, Mrs. Warren, and the other officers of the society. Mrs. I. Sternhill, Chairman.

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### REPORT OF THE PRESS AND PUBLICITY COMMITTEE

At the beginning of this term of office letters were sent to the presidents of each auxiliary in the state seeking their cooperation in the conduct of the Woman's Auxiliary News. The fact was stressed that the Auxiliary News meant news from auxiliaries, and to make that section of the JOURNAL of the Iowa State Medical Society truly representative of the organization, reports of the activities of the various units were essential. Throughout the year six auxiliaries have responded: from Dallas-Guthrie Auxiliary, five reports were received; from Dubuque County, four; from Polk county, three; two each from Pottawattamie and Cass counties, and one from Adair County.



Our space in the JOURNAL has occupied from one to seven pages. State officers and committee chairmen have contributed timely and valuable articles. Our president, Mrs. E. T. Warren, made contributions at various times pertaining to state and national activities of the Auxiliary.

The program committee, headed by Mrs. A. G. Felter, published in October a complete outline of study for the year. This was augmented in later issues by additional articles from Mrs. E. E. Shaw and Mrs. J. E. Dyson.

Outstanding in each publication were the contributions of Mrs. K. M. Chapler and Mrs. Shaw, members of the program committee. Mrs. Chapler gave us "Book Notes" each month, in which she reviewed new books of general interest with medicine as their theme. Mrs. Shaw's *Do You Know* column contained concise and pertinent facts of medical import.

Mrs. W. R. Hornaday, chairman of organization, contributed four articles; from the legislative committee, Mrs. Charles Ryan, chairman, we had three articles; from the Public Relations, and Hygeia

chairmen, Mrs. W. A. Seidler and Mrs. H. F. Clark, respectively, we had two articles, each. There were published also, two accounts regarding the Health Essay Contest of which Mrs. Seidler is chairman. Mrs. T. B. Throckmorton, chairman for the *National Bulletin*, gave that paper publicity through our pages. We are glad to publish original contributions of members. Some of these were printed during the year.

We are indebted to the office staff of the Iowa State Medical Society for their work in compiling and editing our section. We appreciate their effort in sending out reprints of the Auxiliary News to each member every month. They also kept us informed regarding the Speakers Bureau and American Medical Association radio broadcasts and announcements pertaining to state and national auxiliary events. Credit for the motivation and planning of this past year's Auxiliary News belongs to our president, Mrs. Warren.

Your press and publicity chairman has acted as receiver, reporter and coordinator of news.

Mrs. H. I. McPherrin, Chairman.

## Reports of Presidents of County Auxiliaries

### Adair County

The Adair County Auxiliary meets with the doctors, and it has been the custom in the past to stay for the doctors' program, since doctors and their wives from other counties are usually guests. Officers are Mrs. A. S. Bowers of Orient, president; Mrs. A. J. Gantz of Greenfield, vice president; Mrs. Eugene Tinsman of Orient, secretary; and Mrs. L. H. Ahrens of Fontanelle, treasurer. Mrs. A. S. Bowers, President.

### Cass County

The Woman's Auxiliary to the Cass County Medical Society, with a membership of thirteen, held regular monthly meetings during 1940-41. We carried out an educational program using the program material suggested by the state program committee and the Speakers Bureau. We had splendid talks given by local women; namely, Mrs. Joseph Schiff of Anita, who spoke on Austria and the progress in control of social diseases in that country; and Miss Lillian Zindell, superintendent of the Atlantic Hospital, who spoke on "The Doctor's Wife and the Hospital". We placed the magazine *Hygeia* in the city rest room, and are now engaged in Red Cross projects.

Mrs. R. M. Needles, President.

is also one of us, with a 100 per cent membership. This was almost achieved since we had thirty-six paid members, while the doctors had forty-two, with two widowers and two woman doctors.

The two societies met the third Thursday in January, April, July and October at Adel, Perry, Woodward, and Panora, respectively, for luncheon and separate business meetings and programs. We had book reviews and papers on interesting and timely medical subjects, by members, and at Woodward, visited several buildings of the State Hospital.

In each month except July and August, we and the doctors, and occasional guests, met at various towns throughout the two counties for dinner and bridge. For these, the Auxiliary members living in the particular town where we met were the hostesses, who planned the dinner, bought the prizes, and so forth. The average attendance was thirty-five.

The Auxiliary members were, on the whole, loyal to *Hygeia*, and also a number of subscriptions were sent in for the *Bulletin*.

We have been active in sponsoring the State Health Essay Contest, and, following our custom each year since the contest was started, we contributed five dollars.

Mrs. Charles E. Irwin, President.

### Dubuque County

The Woman's Auxiliary to the Dallas-Guthrie Medical Society made a special effort in 1940 to honor our state president, Mrs. E. T. Warren, who

The Woman's Auxiliary to the Dubuque County Medical Society held seven meetings during the past year in April, May, October, November, December, January and March.

The April meeting was a dinner with our husbands, at the Julien Dubuque Hotel, at which Dr. and Mrs. Marker of Davenport were our guests. After dinner, Dr. Marker spoke before the University Department of the Women's Club. His subject was Mental Hygiene. The Auxiliary provided the speaker, through the facilities of the Speakers Bureau.

Our program committee outlined a program for the year, based on the one suggested by the state program committee. Several very instructive papers were presented.

Our *Hygeia* campaign was ably conducted by the chairman, Mrs. Walter Cary. We sent in forty-six subscriptions, for which we received honorable mention from the national organization. This, however, does not show the extent of the work done. We have placed *Hygeia* in all the city schools, but the campaign started too late to have it included in the 1940 county school budget. Next year we hope to have it placed in all the county schools.

Dr. A. J. Entringer, county health physician, spoke at our January meeting. He told us about the health conditions in our city and county. His subject was Vital Statistics.

In March, Miss Naomi Lorenz, county nurse, was our guest speaker at a luncheon. She told us about the health work being done in the county. She suggested ways in which we might be of assistance and we have adopted this as one of our projects for the coming year.

In April, we were honored by having Mrs. E. T. Warren, state president, as our guest. Her talk was an inspiration to all of us.

We have been sewing and knitting for the Red Cross. We have made layettes and woolen skirts, and knitted a considerable number of sweaters, shawls, scarfs and caps. At Christmas time we contributed to the fund for baskets for the needy.

As the year closes, I feel that, due to the interest and cooperation of every member, it has been a satisfactory one. Our membership has increased from seventeen to twenty-eight. Our meetings have been well attended and our associations pleasant.

Mrs. M. J. Moes, President.

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#### Greene County

The Woman's Auxiliary to the Greene County Medical Society meets on the first Thursday of each month. It was organized in April, 1941, with the following officers: Mrs. Phillips E. Lohr of Churdan, president, and Mrs. W. E. Chase of Rippey, secretary and treasurer. There is a membership of fifteen.

Mrs. Phillips E. Lohr, President.

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#### Jackson County

Our auxiliary was organized on June 15, 1930, and at present we have fourteen members. Our meetings are held four times each year, at the same

time that the Jackson County Medical Society meets. After a dinner with the doctors we adjourn for our business meeting and program, which consists of current events along medical lines, book reviews and discussions of various health projects. We contributed five dollars to the Health Essay Contest. Most of our members are actively engaged in the Federation of Women's Clubs, Parent-Teacher Association, Red Cross and other organizations interested in the health and welfare of our community.

Mrs. Earl V. Andrew, President.

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#### Louisa County

The Woman's Auxiliary to the Louisa County Medical Society has a membership of seven. They meet, have dinner with the doctors and while the doctors have their business meeting and program, they have a social meeting. All members are active in club work.

Mrs. S. J. Lewis, President.

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#### Madison County

The Woman's Auxiliary to the Madison County Medical Society has a membership of eight. We meet the third Monday of each month for a six-thirty dinner followed by a business and social meeting. Although our membership is small we are a congenial group and have interesting discussions on current topics. During the year we had one paper on "New Trends in Health", prepared by one of our members; Mrs. E. T. Warren met with us at one of our meetings and gave an inspiring talk; and our April meeting was given over to a discussion of the cancer problem. Two of our members are compiling a history of all doctors of the county. Another is a member of the Farm Bureau Chorus; one is president of one of our Parent-Teacher Associations; one is health chairman over seventeen counties of the central district; and still another is co-chairman of the Women's Field Army for the Control of Cancer.

Mrs. C. B. Hickenlooper, President.

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#### Monroe County

Officers of the Woman's Auxiliary to the Monroe County Medical Society are: Mrs. J. F. Stafford of Lovilia, president; Mrs. T. A. Moran of Melrose, vice president; and Mrs. C. N. Hyatt of Albia, secretary and treasurer. The organization has a membership of seven, and meets occasionally at the same time the doctors do.

Mrs. J. F. Stafford, President.

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#### Muscatine County

The Woman's Auxiliary to the Muscatine County Medical Society has held four meetings during the past year. Our work has been in securing subscriptions for *Hygeia*. From our own funds we placed the magazine in an orphan's home, the Y. W. C. A., the Junior College and the High School.

Mrs. C. P. Phillips, President.



### Northwest Unit

The Northwest Unit of the Woman's Auxiliary consisting of doctors' wives residing in Lyon, O'Brien, Osceola and Sioux Counties, held two meetings during the year in connection with the doctors' regular fall and spring meetings. In addition we were entertained at the home of Mrs. Frank P. Winkler in Sibley, at which Mrs. E. T. Warren of Stuart, state president, was an honored guest.

Mrs. Walter Vander Wilt, President.

### Polk County

The Woman's Auxiliary to the Polk County Medical Society is happy to report a membership of 163 for the year closing January, 1941, the largest paid membership since the organization of the auxiliary. Year books were made and given to each member. Hostess badges were made, and six to eight women acted as hostesses at each meeting. Six meetings were held, three of which were educational and three of a social nature. The average attendance was around ninety. One evening meeting was held with our husbands as guests at a buffet dinner, after which a program was given; 173 attended this meeting. A Christmas tea was held at the home of Mrs. Joseph B. Priestley, with our state president, Mrs. E. T. Warren of Stuart, as our guest. Each one present brought a gift of clothing, food or money, and ten well-filled baskets were distributed to needy families. During the year twenty cards and five notes were sent to ill members, and one member, Mrs. Ralph Riegelman, was lost by death on April 8, 1940. The *Hygeia* magazine was placed in forty-three public schools and five parochial schools (nine months' subscriptions), one twelve months' subscription at Dowling College, and two twelve months' personal subscriptions were secured.

Mrs. Edward J. Harnagel, President.

### Pottawattamie County

In addition to a pleasant year socially, our auxiliary has engaged in a number of very worthwhile activities such as placing the *Hygeia* magazine in the schools, sewing for the Red Cross, distributing Christmas baskets to needy families, and contributing five dollars for the State Health Essay Contest. Two new members, Mrs. Lee R. Martin and Mrs. E. C. Weir, were welcomed into the society.

In March we met for luncheon at the home of Mrs. Gordon Best. After a musical program, committees were announced for the ensuing year. Mrs. I. Sternhill was our hostess at a breakfast for our April meeting. A social hour followed. The graduating nurses of Jennie Edmundson and Mercy Hospitals were our honored guests at a luncheon at the home of Mrs. S. D. Maiden in May.

An interesting program was presented at the first meeting following the summer vacation. After luncheon at the Parks' Tea Room, Miss Ethel M. Solliday

of the Red Cross talked on the functions of the Red Cross in Europe during the present war-time period. We voted our services to the Red Cross sewing project one day a month. In November we were honored by our state president, Mrs. E. T. Warren, who gave an interesting talk on suggested programs for the year, and the necessity of doctors' wives being well informed. Two talks on Poliomyelitis were given, one by Mrs. Grant Augustine and the other by Mrs. I. Sternhill. Under the direction of Mrs. Grant Augustine and Mrs. Aldis A. Johnson, we distributed food to two large families at Christmas. At our January meeting, Mrs. Jack V. Treynor gave an interesting talk on "The Life and Medical Career of Oliver Wendell Holmes." Mrs. L. C. Christoffer-son, R.N., showed films on the Discovery of Radium and Koch's Discovery of Tuberculosis.

Under the able chairmanship of Mrs. I. Sternhill, the *Hygeia* committee raised \$22.50 to place the magazine in the various public and parochial schools.

In closing I wish to express my sincere appreciation to all the auxiliary members, who, though busily engaged in other civic, educational and charitable organizations, have very generously given of their time and effort to make the past year a successful one.

Mrs. A. A. Robertson, President.

### Upper Des Moines District Auxiliary

The Upper Des Moines District Auxiliary, composed of doctors' wives living in Clay, Dickinson, Emmet and Palo Alto Counties, has a membership of twelve. They meet at the same time as the doctors of this organization convene. Officers are: Mrs. F. D. Edington of Spencer, president; Mrs. Don F. Rodawig of Spirit Lake, vice president; and Mrs. O. H. Miller of Estherville, secretary and treasurer.

Mrs. F. D. Edington, President.

### Washington County

The Woman's Auxiliary to the Washington County Medical Society has a membership of nine, and they meet when the county medical society holds its monthly meetings.

Mrs. E. D. Miller, President.

### SPEAKERS BUREAU RADIO SCHEDULE

WSUI—Tuesdays at 2:30 p. m.

WOI—Wednesdays at 2:05 p. m.

July 1-2 Summer Round-Up, Lee F. Hill, M.D.

July 8-9 Group Hospitalization, Mr. F. P. G. Lattner

July 15-16 Physiology of Blood Circulation, Charles A. Nicoll, M.D.

July 22-23 Eye Strain, Rollin W. Wood, M.D.

July 29-30 Plastic Surgery, Leo H. LaDage, M.D.

## SOCIETY PROCEEDINGS

### Bremer County

The monthly dinner meeting of the Bremer County Medical Society and the staff of St. Joseph's Mercy Hospital was held Monday, May 26, at the Fortner Hotel in Waverly. The scientific program consisted of a talk on The Diagnosis of Tuberculosis, by J. Carl Painter, M.D., superintendent of Sunnycrest Sanatorium, Dubuque.

P. K. Graening, M.D., Secretary.

### Cass County

The Cass County Medical Society met Friday, May 23, at the Hotel Whitney in Atlantic. Lee Forrest Hill, M.D., of Des Moines, spoke on The Summer Round-Up and Preschool Examination, and presented a motion picture film entitled "When Bobby Goes to School".

### Greene County

The regular monthly meeting of the Greene County Medical Society was held at the Greene County Hospital in Jefferson Thursday, June 12. Diedrich J. Haines, M.D., of Des Moines, spoke on Blood Diseases.

John R. Black, M.D., Secretary.

### Hardin County

Meeting in regular session at the Winchester Hotel in Eldora Tuesday, May 27, members of the Hardin County Medical Society heard a talk by Wilbur C. Thatcher, M.D., of Fort Dodge, on Abnormal Labor.

W. E. Marsh, M.D., Secretary.

### Louisa County

The Louisa County Medical Society met Thursday, June 12, in Morning Sun, and passed a resolution setting the premarital examination fee at a minimum of three dollars per person.

Kyle T. DeYarman, M.D., Secretary.

### Monroe County

Roy C. Gutch, M.D., of Chariton, councilor for the ninth district, met with the Monroe County Medical Society recently in Albia, and discussed with the members of that group some of the problems now confronting the medical profession.

T. A. Moran, M.D., Secretary.

### Shelby County

Recently elected officers of the Shelby County Medical Society include Dr. James P. McGowan of

Harlan, president; Dr. Alfred Sorensen of Harlan, secretary and treasurer; and Dr. Carl V. Bisgard, also of Harlan, delegate.

### Woodbury County

The regular monthly meeting of the Woodbury County Medical Society was held Monday, June 23, at the Sioux City Country Club with dinner at seven o'clock. Elmer L. DeGowin, M.D., associate professor of medicine at the State University of Iowa, College of Medicine, spoke on The Use and Management of the Blood and Serum Bank. Willis M. Fowler, M.D., assistant professor of medicine from the same institution, also appeared on the program, discussing The Indications for Transfusion.

W. K. Hicks, M.D., Secretary.

### Tri-County Medical Society

The Tri-County Medical Society, composed of physicians in Washington, Henry and Jefferson Counties, held a meeting in Washington, Tuesday, May 27, at the Nurses Home. Walter D. Abbott, M.D., of Des Moines, was the speaker of the evening, taking for his topic, The Diagnosis of Low Back Pain.

W. S. Kyle, M.D., Secretary.

### PERSONAL MENTION

Dr. Thomas L. Waring, formerly of Iowa City, has moved to Memphis, Tennessee, where he will be associated with the Campbell Orthopedic Clinic. For the past ten years he has been a member of the faculty of the State University of Iowa, College of Medicine, in the department of orthopedics.

Dr. Fred L. Blair, who has practiced more than a quarter of a century in Lytton, has moved to Fonda, where he and his son, Dr. Fred L. Blair, Jr., will be associated together.

Dr. Thomas L. Trunnell has located in Waterloo where he will enter the private practice of medicine, specializing in dermatology. He was graduated in 1937 from the State University of Iowa, College of Medicine, and has been a member of the faculty in Iowa City for the past three years.

Dr. Howard A. Weis, president of the Scott County Medical Society, was one of the speakers at a meeting of various professional groups, held at the Fort Armstrong Hotel in Rock Island, May 27, when action was taken to organize the Rock Island County Interprofessional Association.



Dr. Byron M. Merkel of Des Moines, has been appointed flight surgeon for the 124th Observation Squadron of the Iowa National Guard. His appointment follows his recent completion of a special course in aviation medicine at Randolph Field, Texas.

Dr. Arch F. O'Donoghue of Sioux City, spoke before a joint meeting of the Minnesota State Medical Society and the Great Northern Railway Surgeons, held Monday, May 26, in St. Paul. His subject was "Metal Sutures in Acute and Reconstructive Bone Surgery."

Dr. I. Ziferstein has resigned his position on the staff of the State Hospital in Mt. Pleasant, and accepted a position on the resident staff of the Psychiatric Institute of Grasslands Hospital at Valhalla, New York.

Dr. Sidney Brownstone, who for the past four years has been a member of the staff at Oakdale State Sanatorium for Tuberculosis, has located in Clear Lake, where he will enter the private practice of medicine.

Dr. Eugene Van Epps of Clinton was guest speaker for the Fulton, Illinois, Kiwanis Club, Tuesday, May 13, discussing "Pediatrics—What It Is."

Dr. Olan R. Hyndman, associate professor of surgery, State University of Iowa, College of Medicine, and head of the division of neurologic surgery, has become a diplomate of the American Board of Neurological Surgery, by examination in Philadelphia, Pennsylvania.

Dr. Harold McK. Bunch of Shenandoah announces the association of Dr. Lester W. Savage with him in the practice of medicine. Dr. Savage was graduated in 1936 from the University of Pennsylvania School of Medicine, Philadelphia, and completed his internship at the Philadelphia General Hospital.

#### MARRIAGES

Miss Dorothy Maxine Ekstrom, daughter of Mr. and Mrs. E. P. Ekstrom of North Platte, Nebraska, and Dr. Thomas E. Kane of Boone, were married Wednesday, April 2, at the Sacred Heart Church in Boone. Immediately following the ceremony, Dr. and Mrs. Kane left for Omaha, where they boarded a plane for a trip to Mexico City. They will return to Boone, where Dr. Kane has been engaged in the practice of medicine for the past two years.

Miss Inez McCall of Tipton, daughter of Cyrus McCall of Kansas City, and Dr. Harry L. Walker of Cedar Rapids, were married April 14, in Rochester,

Minnesota. After a wedding trip to Kansas City and Excelsior Springs, they returned to Cedar Rapids, where Dr. Walker has been practicing for a number of years.

Miss Pauline Smith, daughter of Mr. and Mrs. Earl P. Smith of Wapello, was married Sunday, June 8, to Dr. Milton F. Kiesau of Postville. After a wedding trip through the western states they will return to Postville, where Dr. Kiesau is associated with his father, Dr. F. W. Kiesau, in the practice of medicine.

The marriage of Miss Ruth Adair, daughter of Mr. and Mrs. Fred Adair of Indianola, and Dr. Luther C. Hickerson of Brooklyn, took place at the home of the bride's parents, Wednesday, June 18. After a two weeks' trip they will be at home in Brooklyn where Dr. Hickerson has just entered the practice of medicine.

Emilie Griffin of Marion, daughter of Mr. and Mrs. William W. Yocum of Melbourne, was married to Dr. Robert Y. Netolicky of Cedar Rapids, Saturday, May 24, at the Little Brown Church in Nashua. After a short wedding trip the young couple returned to Cedar Rapids, where Dr. Netolicky is practicing medicine.

#### DEATH NOTICES

Donovan, Michael Joseph, of Perry, aged seventy, died suddenly June 12 after a heart attack. He was graduated in 1907 from Creighton University School of Medicine, Omaha, and at the time of his death was a member of the Dallas-Guthrie Medical Society.

Eslick, Louis Edward, of Rockwell City, aged seventy-three, died suddenly May 28 of cerebral hemorrhage. He was graduated in 1894 from the Eclectic Medical College, Cincinnati, and at the time of his death was a member of the Calhoun County Medical Society.

Huntoon, Gardner A., of Des Moines, aged sixty-six, died May 30 after a heart attack. He was graduated in 1896 from the State University of Iowa, College of Homeopathic Medicine, Iowa City, and at the time of his death was a member of the Polk County Medical Society.

Moore, Edwin Augustus, of Harlan, aged sixty-eight, died May 25 following a six weeks' illness. He was graduated in 1901 from Creighton University School of Medicine, Omaha, and at the time of his death was a member of the Shelby County Medical Society. More complete biographic notes will be found on page 358 of this issue.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. McCLINTOCK, Iowa City

DR. R. T. LENAGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. HENRY G. LANGWORTHY, Dubuque

## Professional Ethics In 1852

The Medical Department of Iowa University and Rush Medical College  
FERDINAND J. SMITH, M.D., Milford, Iowa

The battle for students in the early days of the profession engendered much ill-feeling between the one-time medical department of our State University, located at Keokuk, and the newly opened medical school in Iowa City, created by a constitutional amendment which guaranteed all departments of the University to Iowa City when the state capitol was moved to Des Moines.

In 1884, when the writer enrolled in the medical department of our State University under the tutelage of Dean W. F. Peck, sessions were short, lasting from late November to early March, and friction was rife between the two institutions in the effort to secure enough students to warrant the existence of two schools for even such a short term. The result was the ultimate abandonment of the Keokuk school.

An editorial, entitled "The North-Western Medical and Surgical Journal, and the Rush Medical College," written by Dr. John Sanford and appearing in the July, 1852, issue of the *Western Medico-Chirurgical Journal*, would indicate that at least one of the Chicago medical schools was guilty of unethical conduct in its efforts to attract students from the Keokuk College of Medicine, then a part of the State University of Iowa.

The article\* begins by drawing the attention of the medical public to the misrepresentations of the *Northwestern Medical and Surgical Journal*, published with the sanction of Rush Medical College. Dr. Sanford points out that it is never a source of pleasure to a medical man to expose the dishonorable conduct of his colleagues, but he adds that there are occasions when "to suffer nefarious and dishonorable transactions to pass unnoticed, involves those who fail to expose them, in the reproach and censure which these transactions justly merit." The law of self-defense

required him to defend the institutions of his adopted state against the falsehoods of the Chicago school and its organ.

The article calls attention to a statement in the June issue of the *Northwestern Medical and Surgical Journal* as follows: "Some person or persons, assuming to act under the authority of the University of Iowa, sent to the Secretary of the American Medical Association, at its meeting at Charleston, a protest against the admission of delegates in that body from Rush Medical College."

To refute the insinuation that the Medical Department of the University of Iowa was not fully and legally organized, Dr. Sanford quotes from a report unanimously adopted by the Board of Trustees of Iowa State University in December, 1848.

"Your committee to whom was referred a memorial from an association of physicians and others, on the subject of organizing a Medical Department of the University, respectfully report:

"That, in their opinion, it will comport with the interests of the University, and of our State generally, to organize immediately the Medical Department of the University, and, in view of such organization, they suggest for your adoption the following provision and conditions."

Then follows the plan of organization, the names of the faculty, and other details which need not be mentioned: suffice it to say, that the report was unanimously adopted in every particular by the Board of Trustees, appointed by the General Assembly, in accordance with a provision of the Constitution, and the Medical Department fully and legally organized. In regard to this organization, the Superintendent of Public Instruction, Hon. Thos. H. Benton, Jr., speaks as follows, in his biennial report to the Legislature:

\*The complete article, printed in the July, 1852, issue of the *Western Medico-Chirurgical Journal*, may be obtained from the Librarian of the Iowa State Medical Library in Des Moines.



"In regard to the literary department of this institution (State University), nothing has been done since the adjournment of the General Assembly. The law and medical departments were organized on the 21st of February, 1850, in the manner indicated in my last report. Prior to this time the 'College of Physicians and Surgeons of the Upper Mississippi' had been established at Davenport. The trustees, considering it impolitic to attempt the organization of two institutions of this character, at so early a period, upon mutual consultation with the faculty of the one at Davenport, determined to recognize them as the 'College of Physicians and Surgeons of the State University of Iowa', and the following gentlemen were appointed members of the faculty:

Nicholas Hard, M.D., Professor of Anatomy and President of the Faculty.

John F. Sanford, M.D., Professor of Surgery and Dean.

Samuel G. Armor, M.D., Professor of Physiology, Pathology and Clinical Medicine.

A. S. Hudson, M.D., Professor of Materia Medica and Therapeutics.

D. L. McGuigan, M.D., Professor of Obstetrics and Diseases of Women and Children.

Henry M. Mathews, M.D., Professor of Chemistry and Pharmacy.

J. C. Hughes, M.D., Demonstrator of Anatomy.

"He then proceeds to recommend an appropriation 'for the benefit of this department of the University', and to embody in his report to the Assembly, the report of the faculty to the board of trustees, a portion of which, as exhibiting the history and condition of the school, we copy."

Dr. Benton gives as the main reason for the removal of the school to a more populous town than Davenport the increasing demand for clinical privileges and extended opportunities for cultivating practical anatomy on the part of the Medical Associations, particularly the American Medical Association, and medical men in general. In pursuance of this aim one of their number visited various other towns and cities to ascertain their facilities, with the result that Keokuk was selected as the permanent seat of the Medical Department of the University.

On lots donated by Mr. H. T. Reed, liberal contributions by public-spirited citizens made possible the erection of a medical school. On the first Monday in November, the session opened with fifty students in attendance; another liberal appropriation assured the erection of a one hun-

dred-bed hospital to be ready the following January. A collection of one thousand anatomic specimens, the excellence of the chemical apparatus, and the fact that delegates had twice been sent to the American Medical Association, first to Boston, then to Cincinnati—these facts were brought to the attention of the trustees.

The faculty then begged leave to submit to the trustees that some legislation establishing their legal existence and relation with the university, would greatly benefit them. Among the most important provisions of this kind, are those making them an integral part of the university establishment of this state by special act, and in the same way, giving them the authority to confer the degree of doctor of medicine upon those, who, after examination, may be found worthy; also, the provision making the diploma, thus conferred, a license to practice medicine and surgery in Iowa, all of which is respectfully submitted.

JNO. F. SANFORD, M.D.  
Dean of Medical Department,  
Iowa University.

"In accordance with the request contained in the latter part of this report, and the recommendation of the Superintendent of Public Instruction, the Legislature of Iowa passed the following act, and immediately after, made an appropriation of \$5,000 to the medical department of the university, which appropriation has since been realized and applied to the proper purposes under the direction of the President of the Board of University Trustees.

"The college of physicians and surgeons located at Keokuk, Lee County, Iowa, is hereby recognized and established as the medical department of the Iowa State University.

"The said medical department shall have power to grant diplomas for the degree of doctor of medicine, to such persons as they deem qualified for such degree, and power to make such regulations and adopt such rules as may be necessary for the good of said department.

"All persons having obtained such degrees of doctor of medicine from said institution, are permitted to practice physic, surgery and obstetrics within this state.

Approved January 28th, 1851."

Dr. Sanford thus proves that the Medical Faculty of the University of Iowa was duly empowered and acting under its sanction in sending a protest to the American Medical Association against the admission of a medical school which had outraged professional ethics.

# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

- PLAGUE ON US—By Geddes Smith. The Commonwealth Fund, 41 East 57th Street, New York, N. Y. Price, \$3.00.
- SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY—By Forrest R. Davison, M.Sc., Ph.D., assistant professor of pharmacology, School of Medicine, University of Arkansas. The C. V. Mosby Company, St. Louis, 1940. Price, \$5.00.
- THE 1940 YEAR BOOK OF PEDIATRICS—Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1941. Price, \$2.50.
- BACILLARY AND RICKETTSIAL INFECTIONS—By William H. Holmes, M.D., professor of medicine, Northwestern University Medical School. The Macmillan Company, New York, 1940. Price, \$6.00.
- METHODS OF TREATMENT—By Logan Clendening, M.D., and Edward H. Hashinger, M.D., medical department of the University of Kansas. Seventh edition. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.
- PHYSICAL DIAGNOSIS—By Ralph H. Major, M.D., professor of medicine, University of Kansas. Second edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price \$5.00.
- VITAMIN THERAPY IN GENERAL PRACTICE—By Edgar S. Gordon, M.D., associate in medicine, and Elmer L. Severinghaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1940. Price, \$2.75.

- TECHNIC OF CONTRACEPTION CONTROL—By Robert L. Dickinson, M.D., and W. E. Morris, M.D. The Williams and Wilkins Company, Baltimore, 1941. Price, fifty cents.
- THE 1940 YEAR BOOK OF GENERAL THERAPEUTICS—Edited by Oscar W. Bethea, M.D., professor of clinical medicine, Tulane University School of Medicine. The Year Book Publishers, Chicago, 1941. Price, \$2.50.
- PROCTOLOGY FOR THE GENERAL PRACTITIONER—By Frederick D. Smith, M.D., formerly associate in proctology, Graduate School of Medicine, University of Pennsylvania. Second revised edition. F. A. Davis Company, Philadelphia, 1941. Price, \$4.50.
- HOW TO PREVENT GOITER—By Israel Bram, M.D., Philadelphia. E. P. Dutton and Company, 300 Fourth Avenue, New York, 1941. Price, \$2.00.
- CLINICAL PELLAGRA—By Scale Harris, M.D., professor emeritus of medicine, University of Alabama. The C. V. Mosby Company, St. Louis, 1941. Price, \$7.00.
- THE DOCTOR AND THE DIFFICULT CHILD—By William Moodie, M.D., Medical Director, London Child Guidance Clinic. The Commonwealth Fund, New York, 1940. Price, \$1.50.
- OFFICE UROLOGY—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1940. Price, \$10.00.

## BOOK REVIEWS

### ARTHRITIS AND ALLIED CONDITIONS

By Bernard I. Comroe, M.D., instructor in medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1940. Price, \$8.50.

This book on arthritis is as comprehensive a presentation as the reviewer has ever read. The author presents the etiology, pathology, symptoms, diagnosis and treatment of all types of arthritis. He lists all different types of treatment, when indicated and the probable results. In addition, he gives chapters on internal derangement of the knee joint, the painful shoulder, painful feet, backache, sciatica, and tumors of joints and tendon sheaths.

The material was well presented and I enjoyed reading it. It can be recommended highly to any one interested in the subject of arthritis—particularly the general practitioner, the internist and the orthopedist. V. C. R.

### PHYSICAL MEDICINE

By Frank H. Krusen, M.D., associate professor of physical medicine, The Mayo Foundation, University of Minnesota. W. B. Saunders Company, Philadelphia, 1941. Price, \$10.00.

The challenge has frequently been directed to the medical profession, that in their practice of drug therapy, the procedures of physical medicine have been minimized or completely disregarded. This challenge, we feel, is to a large extent justified, and the criticism may be carried back of the practitioner to the failure of most medical colleges to give adequate instructions in physical medicine. A com-

prehensive and up-to-date treatise on this subject should receive very prompt acceptance by the entire medical profession.

In the nine sections of this book, the author covers in detail, the therapy of heat, light, and electricity, the several applications of hydrotherapy and mechanotherapy, with discussions concerning the indications for each procedure and its best methods of application. Each section includes a well chosen bibliography. The numerous illustrations are well selected and carefully reproduced, adding much to the usefulness of this otherwise excellent volume. R. R. S.

### PHYSICAL DIAGNOSIS

By William N. Anderson, M.D., associate clinical professor of Medicine, University of Southern California School of Medicine, Los Angeles. Lea and Febiger, Philadelphia, 1940. Price, \$4.75.

This modestly priced volume on physical diagnosis is divided into three sections. The first section covers the fundamental principles of physical diagnosis, discussing the history, and the general principles underlying inspection, palpation, percussion and auscultation. The second section covers the physical examination of the various regions of the body in an orderly manner, calling attention to findings that aid in making a diagnosis. The third section is devoted to physical diagnosis in disease and discusses the findings in disease of the upper respiratory system, the chest, heart and lungs, circulatory system and abdominal organs. With the exception of the heart and lungs, the descriptions are sketchy and do not receive the discussion they



merit. The text suffers from a lack of illustrations, there being only 92 present in the entire book.

The paper is of medium quality, and the reviewer received the impression that the book was written primarily as an inexpensive text to supplement the author's course in physical diagnosis. It is not recommended as a reference book for the physician.

A. L. J.

#### OBSTETRICS AND GYNECOLOGY

Edited by Fred L. Adair, M.D., professor of obstetrics and gynecology, University of Chicago. Two volume illustrated set. Lea and Febiger, Philadelphia, 1940. Price, \$20.00.

This two-volume text has been prepared by members of the staff of the Department of Obstetrics and Gynecology of the University of Chicago and the Chicago Lying-In Hospital under the editorship of Dr. Fred L. Adair.

The first volume is divided into five sections captioned as follows: the basic biologic relationships of the human female; approach to communal and individual problems; life cycle of the human female; normal and abnormal conditions of the non-pregnant and pregnant woman; and normal and abnormal conditions of the parturient woman. The first section presents some of the biologic aspects of human reproduction, the anatomic and pathologic relationships of the generative organs, nutritional requirements of pregnancy, lactation and physiology of the female genital organs. The second section is unique in an obstetric text and deals with general considerations of maternal care, maternal and fetal morbidity and mortality. Sterilization, therapeutic abortion and contraception are discussed. The chapter on maternal care reflects the views of the editor on the essentials of prenatal and postpartum care. In the following section the life cycle of the female includes a discussion beginning with embryologic considerations and carrying through the changes incidental to adolescence, maturity and the retrogressive changes of postreproductive life. This section also includes chapters on sterility and infertility and marital physiology and pathology. The two remaining sections are concerned with discussions of normal and abnormal conditions of the non-pregnant, pregnant and parturient state. They include chapters on physiology, diagnosis of pregnancy, abortion, ectopic pregnancy and toxemias of early and late pregnancy. The chapter on management of normal labor is followed by a discussion on the conduct of labor in the home. The section continues with the pathology of labor, including such subjects as premature labor, prolonged pregnancy, prolapse of the cord and obstetric hemorrhage.

The second volume is divided into four sections under the following headings: normal and abnormal conditions of the postpartum woman and of the newborn infant; diseases of the female genitalia; medical and surgical specialties in relation to obstetrics and gynecology; and obstetric and gynecologic opera-

tive procedures. Section one provides a discussion of the anatomy and physiology of the pregnant woman, postpartum care and puerperal infection. Other chapters present the relationship of pediatrics to obstetrics, general considerations of physiology, pathology and care of the newborn, and medical, surgical and orthopedic conditions of the newborn. The following section covers the diseases of the female genitalia including generous discussions of neoplastic conditions, relaxation and infections and retrogressive changes of the genitalia. The third section consists of a discussion of the relationship of the medical and surgical specialties to obstetrics and gynecology, including a presentation of the subject of pelvimetry from the standpoint of roentgenology. The final section presents general considerations of preoperative, operative and postoperative care, anesthesia and analgesia, intravenous therapy, blood transfusions, hysterectomy, cesarean section and other operative obstetric procedures.

These two volumes bring to the field of obstetrics and gynecology a new organization and a different type of presentation of subject material not common to the average medical text. They adequately cover the theory and practice of obstetrics and gynecology and point out the basic relationships of this specialty to general medical practice and other medical and surgical specialties. There is no doubt but that these volumes will soon take their rightful place among the current standard and reference texts. They are to be highly recommended to the profession.

A. W. B.

#### AN INTRODUCTION TO DERMATOLOGY

By Richard L. Sutton, M.D., emeritus professor of dermatology, University of Kansas School of Medicine; and Richard L. Sutton, Jr., M.D., assistant professor of dermatology, University of Kansas, School of Medicine. Fourth edition. The C. V. Mosby Company, St. Louis, 1941. Price \$9.00.

In the opinion of the reviewer the authors have done an admirable job in condensing and arranging the material necessary to make up a standard textbook on dermatology.

While the volume is published as an introduction to dermatology the various cutaneous disorders of common occurrence are discussed with adequate completeness. The rarer dermatoses are clearly but less extensively described. For those who are not familiar with dermatologic practice the chapter on diagnosis should be profitable reading. The bibliographic material is arranged according to nomenclature at the conclusion of the text which in the reviewer's opinion seems to be more practical than having such material appear as foot notes or at the conclusion of each chapter.

On the whole it appears that the fourth edition of Sutton and Sutton's book is well worthy of continuing its place in the field of dermatologic literature.

W. M. W.

### MANUAL OF PHYSICAL DIAGNOSIS

By Maurice Lewison, M.D., professor of physical diagnosis, University of Illinois, College of Medicine; and Ellis B. Freilich, M.D., associate professor of medicine, University of Illinois, College of Medicine. The Year Book Publishers, Chicago, 1941. Price, \$3.00.

The medical student is not the only person who will derive great benefit from reading and studying this manual of physical diagnosis. The doctor who is engaged in the general practice of medicine or the specialist certainly needs "brushing up" in the art of physical examination. This need has been clearly demonstrated by the number of men rejected at induction centers after the medical examination has been made.

The occasional reviewing of books on diagnosing disease processes will be valuable to all of us, and the book under discussion is an excellent resumé of the subject.

E. B. W.

### MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

#### Meeting of the Council May 14, 1941

The Council of the Iowa State Medical Society met on the first day of the annual session at the Hotel Blackhawk in Davenport at two p. m. Those present were: Doctors L. L. Carr of Clermont, C. H. Cretzmeyer of Algona, F. P. Winkler of Sibley, J. E. Reeder of Sioux City, E. F. Beeh of Fort Dodge, H. A. Householder of Winthrop, C. A. Boice of Washington, R. C. Gutch of Chariton, J. G. Macrae of Creston, and A. W. Erskine of Cedar Rapids representing the Cancer Committee.

The meeting was called to order by the chairman; minutes of the previous meeting were approved; and the report of the Cancer Committee as it appeared in the handbook, with two deletions, was approved. It was also voted to ask the House of Delegates to approve the preparation of a manual on lay education in cancer, and to approve in principle the wish of the Cancer Committee for legislation to further cancer control. The committee on Industrial Health was considered and it was decided to have it continue to function as a committee of the Council. Meeting adjourned at three p. m.

#### Meeting of the Council May 15, 1941

The second meeting of the Council was held May 15 at ten a. m. with the following present: Doctors Carr, Cretzmeyer, Winkler, Reeder, Beeh, Ellyson, Householder, Boice and Macrae. It was decided to enlarge the membership of the Committee on Industrial Health, and the Council also voted to discuss the life membership situation and rule with the

Committee on Constitution and By-Laws. The meeting adjourned at eleven a. m.

#### Meeting of the Council May 16, 1941

The third meeting of the Council was held May 16 at nine a. m., with the following persons present: Doctors Carr, Cretzmeyer, Winkler, Reeder, Beeh, Ellyson, Householder, Boice, Gutch, Macrae, and the new councilor for the third district, Dr. J. B. Knipe of Armstrong.

Dr. Reeder was elected chairman for the year; Dr. Macrae was named secretary. Committee appointments were left unchanged, and the meeting adjourned at ten-thirty a. m.

#### Meeting of the Board of Trustees June 18, 1941

The Board of Trustees of the Iowa State Medical Society met in the central office in Des Moines at nine a. m. Wednesday morning, June 18, 1941. Those present were Doctors O. J. Fay of Des Moines, John I. Marker of Davenport and Lee R. Woodward of Mason City, trustees; Robert L. Parker, Secretary; and H. J. McCoy, treasurer. Dr. Fay was elected chairman for the ensuing year; minutes were approved and bills authorized; the editor and associate editor were reappointed; and salaries for 1941-1942 were fixed. The publication of the JOURNAL in 1942 was discussed and the meeting adjourned at eleven a. m.

#### EDWIN A. (GUS) MOORE OF HARLAN 1872-1941

Edwin A. Moore was born in Washington county, Iowa, September 3, 1872, and passed away at his home in Harlan, May 25, 1941. When he was six years old, his father, Dr. Edwin B. Moore, moved to Harlan, and this was the family home from that time. Dr. Moore attended the Harlan schools and then entered Creighton University. He left Creighton to teach school for three years, then returned to take his medical course, being graduated in 1901. Following his graduation he served as railway physician for the Union Pacific Railroad for two years, after which he established his practice at Harlan.

Dr. Moore was very active in community affairs and held several county offices. In 1934 he was elected to the Iowa legislature and served three terms in the House of Representatives. He was a member of the Public Health Committee while in the House, and in this capacity he rendered much valuable service to the medical profession. He was instrumental in procuring the passage of the basic science law in 1935, and at all times he could be depended upon to promote the best health interests of the people. His advice and counsel were always freely given, and in his death organized medicine has lost one of its most stalwart supporters.



# MEMBERSHIP ROSTER

*of the*

## IOWA STATE MEDICAL SOCIETY

1941



Members in Good Standing as of  
June 25, 1941





- Aageson, Carl A., Dows  
 Abbott, Walter D., Des Moines  
 Abegg, Henry H., Dougherty  
 Acher, Albert E., Fort Dodge  
 Acker, Wesley H., Waterloo  
 Ackerman, Emma M., Sioux City  
 Adair, Gael M., Anita  
 Adams, Carroll O., Mason City  
 Adams, Ernest M., Central City  
 Adams, Glenn W., Royal  
 Adams, Leon P., Newton  
 Adams, Reta, Independence  
 Adrian, Frank, Sigourney  
 Ady, Albert E., West Liberty  
 Aeilts, Erko S., Little Rock  
 Agnew, Fred F., Independence  
 Agnew, James W., Iowa City  
 Ahrens, Harvey, Redfield  
 Ahrens, Lewis H., Fontanelle  
 Aid, Francis H., Burlington  
 Albright, George C., Iowa City  
 Alcock, Nathaniel G., Iowa City  
 Alcorn, William L., Washington  
 Alden, Oscar, Red Oak  
 Aldrich, J. Frank, Shenandoah  
 Aleshire, Irma, Cedar Rapids  
 Allen, James H., Iowa City  
 Alliband, George A., Atlantic  
 Allison, Arthur L., Rodney  
 Allison, Monroe P., Northwood  
 Almquist, Reuben E., Albert City  
 Amdor, William F., Carbon (L.M.)  
 Amesbury, Harry A., Clinton  
 Amick, Louis B., Sac City  
 Amos, Andrew R., Beverly Hills, California (L.M.)  
 Andersen, Bruce V., Greene  
 Anderson, Albert A., Los Angeles, California (L.M.)  
 Anderson, Edward N., Iowa City  
 Anderson, Edward W., Des Moines  
 Anderson, Glenn J., Winterset  
 Anderson, Harold N., Des Moines  
 Anderson, Harry N., Woodbine  
 Anderson, Herbert W., Lenox  
 Anderson, Holger M., Strawberry Point  
 Anderson, N. Boyd, Des Moines (Brownwood, Texas)  
 Anderson, Robert E., Chariton  
 Anderson, Stanley N., Onawa  
 Anderson, William E., Washington\*  
 Andre, Gaylord R., Lisbon (Fort Sam Houston, Texas)  
 Andrew, Earl V., Maquoketa  
 Angell, Charles A., Des Moines  
 Anneberg, Adrian R., Carroll  
 Anneberg, August R., Carroll  
 Anneberg, Walter A., Carroll  
 Anrode, Ralph A., Davenport  
 Anspach, Royal G., Colfax  
 Anspach, Royal S., Mitchellville  
 Anthony, Ernest J., Iowa City  
 Anthony, Walter E., Ottumwa  
 Arent, Asaph, Humboldt  
 Arent, Asa S., Humboldt  
 Arkin, Archie A., Colfax  
 Armitage, George I., Murray  
 Armstrong, Frederick C., Red Oak  
 Armstrong, Max A., Newell  
 Armstrong, Robert B., Ida Grove  
 Armstrong, William B., Ames  
 Arnold, Thomas, Primghar  
 Arthur, William R., Hampton  
 Artis, George H., Cedar Rapids  
 Ash, William E., Council Bluffs  
 Ashby, Atchison A., Sioux City (L.M.)  
 Ashline, George H., Keokuk  
 Atchley, Barney D., Ames  
 Augustine, Grant, Council Bluffs  
 Auner, Jay F., Des Moines  
 Austin, Forrest J., Fort Dodge  
 Ayers, Chester A., Lorimor  
 Bailey, John W., Des Moines  
 Bain, Clarence L., Corning  
 Bairnson, George A., Cedar Falls  
 Baker, Charles J., Fort Dodge  
 Baker, Lyle A., Boston, Massachusetts  
 Baker, Walter E., Des Moines  
 Baldwin, Leon A., Riverton  
 Balkema, Walter S., Sheldon  
 Baltzell, Winston C., Charles City  
 Balzer, Walter J., Davenport  
 Bannister, Murdoch, Ottumwa  
 Banton, Oscar H., Charles City  
 Barber, Oliver S., Creston  
 Barbour, Howard W., Mason City  
 Barer, Charles G., New York, N. Y.  
 Barg, Egmont H., Hampton  
 Barner, John L., Des Moines  
 Barnes, Benjamin S., Shenandoah  
 Barnes, Bernard C., Des Moines  
 Barnes, Albert M., Gilman  
 Barnes, Frederick L., Oskaloosa  
 Barnes, Milford E., Iowa City  
 Barnett, Reu L., Atlantic  
 Barnett, Sylvester W., Cedar Falls  
 Barr, Guy E., Sioux City  
 Barrett, Daniel C., Bloomington, Indiana  
 Barrett, James W., Jr., Independence  
 Barrett, Sterling A., Waterloo  
 Barrett, Thomas M., Knoxville  
 Bartels, Robert N., Iowa City  
 Bartlett, George E., New Sharon  
 Barton, Edwin G., Ottumwa  
 Barton, John C., Independence  
 Bartruff, Charles H., Reinbeck  
 Bascom, Lewis A., Nora Springs  
 Basinger, Byron L., Goldfield  
 Bassett, George H., Sac City  
 Bastron, Harold C., Red Oak  
 Bates, Floyd E., Osceola  
 Bates, Maurice T., Des Moines  
 Bates, William R., Fort Dodge  
 Baumeister, Carl F., Jr., San Jose, California  
 Beal, Arline M., Davenport  
 Beam, Watson W., Rolfe (L.M.)  
 Beardsley, David E., Cedar Rapids  
 Beardsley, Ralph W., Livermore  
 Beatty, Alexander S., Creston  
 Beatty, Edmund D., Mallard  
 Beatty, Howard G., Creston  
 Beaumont, Fred H., Council Bluffs  
 Becker, Royal A., Atlantic  
 Beckman, Peter W., Perry  
 Beddoes, Morris G., Cascade  
 Beeh, Edward F., Fort Dodge  
 Bees, Louis E., Bennett  
 Behrens, George W., Eldridge  
 Bell, Darrell L., Oelwein  
 Bell, Edward P., Pleasantville  
 Bellinger, Frank E., Council Bluffs  
 Bender, Henry A., Waterloo  
 Bendixen, Frederick C., LeMars  
 Benfer, Merrill M., Davenport  
 Bennett, Andrew W., Iowa City  
 Bennett, Geoffrey W., Oskaloosa  
 Bergstrom, Albin C., Missouri Valley  
 Berkstresser, Charles F., Sioux City  
 Bernard, Ransom D., Clarion  
 Berney, Paul W., Cedar Rapids  
 Besser, Edward F., Newton  
 Bessmer, William G., Davenport  
 Best, Gordon N., Council Bluffs  
 Bettler, Phillip L., Sioux City  
 Beveridge, Thomas F., Muscatine (L.M.)  
 Beyer, Arthur E., Guttenberg  
 Bezman, Harry S., Traer  
 Bickert, Joseph N., Cedar Rapids  
 Bickley, Donald W., Waterloo  
 Bickley, G. G., Jr., Waterloo  
 Bickley, John W., Waterloo  
 Bickley, William H., Waterloo  
 Biebesheimer, George A., Reinbeck  
 Bierring, Walter L., Des Moines  
 Biersborn, Byron M., State Center  
 Bigelow, Charles T., Clinton  
 Bild, Elmer J., Ireton  
 Billingsley, John W., Newton  
 Binder, Frederick, Corning  
 Binford, William S., Davenport  
 Bird, Raymond G., Clarion  
 Birge, Richard F., Des Moines  
 Birney, Cleanthus E., Estherville  
 Bisgard, Carl V., Harlan  
 Bisgard, James A., Harlan  
 Bishop, James F., Davenport (Fort Warren, Wyoming)  
 Black, Harold C., Des Moines  
 Black, John R., Jefferson  
 Blackstone, Martin A., Sioux City  
 Blaha, George A., Whitten  
 Blair, Fred L., Fonda  
 Blair, Fred L., Jr., Fonda  
 Block, Charles E., Davenport  
 Block, Lawrence A., Davenport  
 Blome, Arthur L., Iowa City  
 Blome, Glenn C., Ottumwa  
 Blong, Theodore E., Stacyville  
 Blum, Aloysius A., Wall Lake  
 Blum, Otto S., Waverly  
 Blume, Donald B., Sioux City  
 Bockoven, William A., Cresco  
 Boden, Herbert N., Truro  
 Boden, Worthey C., Davenport (Sikeston, Missouri)  
 Boe, Henry, Sioux City  
 Boice, Clyde A., Washington  
 Boiler, William F., Iowa City  
 Boland, Francis W., Monticello, Arkansas  
 Boller, Galen C., Traer  
 Bond, Thomas A., Des Moines  
 Bond, Thomas P., Des Moines (L.M.)  
 Bond, Wilbert W., Des Moines  
 Bone, Harold C., Des Moines  
 Bonnell, Frank S., Fairfield  
 Boody, George, Independence  
 Borgen, Donald L., Gowrie  
 Borre, Helge, Emerson  
 Borts, Irving H., Iowa City  
 Bos, Cornelius N., Oskaloosa  
 Bosch, Calvin C. F., Melvin  
 Bossingham, Earl N., Clarinda  
 Boston, Burr C., Waterloo  
 Boulware, Lois, Iowa City  
 Bourne, Melvin G., Algona  
 Bovenmyer, DeVoe O., Ottumwa  
 Bowen, Frederick S., Woodburn  
 Bowen, William W., Fort Dodge  
 Bower, Edward L., Guthrie Center (L.M.)  
 Bowers, Arthur S., Orient  
 Bowers, Bert A., Sioux City  
 Bowers, Clifford V., LeMars  
 Bowers, Henry W., Nevada  
 Bowie, Louis L., Zearing  
 Bowman, Fred A., Leon (L.M.)  
 Bowser, Will F., Davenport  
 Boyd, Eugene J., Iowa City  
 Boyd, Frank E., Colfax  
 Boyd, Julian D., Iowa City  
 Boyer, Edward H., Sioux City  
 Boyer, Howard C., Council Bluffs  
 Boyer, Ulysses S., Davenport  
 Bradford, Clyde R., Des Moines  
 Bradley, Carl L., Newhall  
 Brandt, Glendor A., Palo  
 Brannon, Patrick J., Denison  
 Braulich, George, Davenport  
 Brecher, Paul W., Storm Lake  
 Breen, Adrian L., Independence  
 Breniman, Eldridge M., Ackley  
 Brentan, Emanuel, Ottumwa  
 Brereton, Harold L., Emmetsburg  
 Brewster, Edward S., St. Paul, Minnesota  
 Bridge, Barton B., Albert City (L.M.)  
 Bridgeman, Harry L., Knoxville (L.M.)  
 Bries, Frank J., Holy Cross  
 Brink, Raymond J., Ayshire  
 Brinker, Marion H., Yale  
 Brinkhaus, Kenneth M., Iowa City (Camp Claiborne, Louisiana)  
 Brinkman, William F., Des Moines  
 Brisbane, Royal E., Huntington Beach, California (L.M.)  
 Brittell, Chancey L., Chariton  
 Brobyn, Thomas E., Grinnell  
 Brock, Walter R., Sheldon  
 Broderick, Clarence E., Cherokee  
 Brody, Sidney, Ottumwa (Fort Snelling, Minnesota)  
 Broghammer, Benjamin G., Cedar Rapids

- Brown, Addison W., Des Moines  
 Brown, Arthur C., Council Bluffs  
 Brown, Gates M., Dayton  
 Brown, George B., Clarion  
 Brown, Harold L., Sioux City  
 Brown, Harry W., Waterloo  
 Brown, James C., Littleport  
 Brown, Kenneth R., Osceola  
 Brown, Merle J., Davenport  
 Brown, Samuel J., Panora (L.M.)  
 Brown, Wayne B., Mt. Pleasant  
 Brownstone, Sidney, Clear Lake  
 Brubaker, Carl F., Corydon  
 Brubaker, John F. R., Hubbard  
 Bruce, James H., Fort Dodge  
 Bruechert, Henry N., Parkersburg  
 Brumer, Herbert B., Clinton  
 Brummitt, Charles F., Centerville  
 Bruner, Julian M., Des Moines  
 Brunk, Amos W., Prescott  
 Brunner, Walter J., Akron  
 Brush, C. Herbert, Shenandoah  
 Bryant, Alfred J., Garden Grove  
 Buchanan, John J., Milford  
 Buckley, Charles E., Blockton  
 Budge, Ben G., Ames  
 Bullock, Alfred H., Cushing  
 Bullock, Grant D., Washta  
 Bullock, William E., Lake Park  
 Bunch, Harold McK., Shenandoah  
 Bunge, Raymond G., Iowa City  
 Burbank, Dean S., Pleasantville  
 Burch, Earl S., Dayton  
 Burcham, Thomas A., Des Moines  
 Burdick, Francis D., Shenandoah (Camp Claiborne, Louisiana)  
 Buresh, Abner, Lime Springs  
 Burger, Joseph M., Hampton  
 Burgeson, Floyd M., Des Moines  
 Burgess, Arthur W., Iowa Falls  
 Burgess, Jonathan A. W., Iowa Falls  
 Burk, Frank O., Davenport  
 Burke, Jerome C., Clinton  
 Burke, Thomas A., Mason City  
 Burke, Thomas J., Davenport  
 Burleson, Marvin W., Fort Dodge  
 Burnett, Francis K., Clarinda (Fort Warren, Wyoming)  
 Burnside, Raymond A., Des Moines  
 Burroughs, Hubert H., Sioux City  
 Bursheim, Peder J., Exira  
 Buser, John R., LaPorte City  
 Bush, Earl B., Ames (Camp Claiborne, Louisiana)  
 Butler, Margaret K., Fort Dodge  
 Butler, Ralph A., Clinton  
 Butterfield, Edwin J., Dallas Center (L.M.)  
 Butterfield, Elwyn T., Dallas Center  
 Butterfield, Rosabell A., Indianola (L.M.)  
 Butts, John H., Waterloo  
 Butzke, Ernest J., Des Moines  
 Buzzard, Irenarch S., Jefferson (L.M.)  
 Byers, Albert G., Coggon  
 Bywater, Joseph B., Grand Junction  
 Calbreath, Lloyd B., Humeston  
 Callaghan, Ambrose J., Pocahontas  
 Callahan, George D., Iowa City  
 Campbell, Benjamin F., Burlington  
 Campbell, Cassius L., Atlantic (L.M.)  
 Campbell, Nathan, Yarmouth  
 Campbell, Thomas R., Sioux Rapids  
 Campbell, Walter V., Oskaloosa  
 Canfield, Herbert W., Baxter  
 Cantrell, Carmi M., Lone Tree  
 Cantwell, John D., Davenport  
 Carey, Michael J., Council Bluffs  
 Carlile, Amos W., Manning  
 Carlson, Elmer H., Muscatine  
 Carlson, Frank G., Mason City (L.M.)  
 Carlson, Leslie A., Fayette  
 Carnazzo, Sebastian A., Monterey, California  
 Carney, Roscoe P., Davenport  
 Carney, Samuel D., Sioux City  
 Carpenter, Fred E., Newton  
 Carpenter, Lewis W. F., Reasnor  
 Carpenter, Ralph C., Marshalltown  
 Carpenter, William S., St. Louis, Mo.  
 Carr, Leslie L., Clermont  
 Carryer, Carl H., Des Moines  
 Carson, Andros, Des Moines (L.M.)  
 Carstensen, Albert B., Linn Grove  
 Cartwright, Forrest P., Grand Junction  
 Carver, David C., Rockwell City  
 Carver, Harry E., Earlham  
 Carver, William F., Fort Dodge  
 Cary, Walter, Dubuque  
 Cash, William H., Lenox  
 Castell, John W., Fairfield  
 Castles, William A., Rippey  
 Catterson, Leroy F., Oskaloosa  
 Caughlan, Gerald V., Council Bluffs  
 Cauley, Francis P., Anthon  
 Caulfield, John D., New Hampton  
 Chadbourne, Theodore L., Vinton  
 Chain, Leo W., Dedham  
 Challed, Don S., Cedar Rapids  
 Chamberlain, Lowell H., Des Moines  
 Chambers, Charles L., Des Moines  
 Chambers, James W., Des Moines  
 Chapler, Keith M., Dexter  
 Chapman, Frederick J., Keokuk  
 Chapman, Robert M., Cedar Rapids  
 Charlton, Thomas B., Clinton  
 Chase, Sumner B., Fort Dodge  
 Chase, Walter E., Rippey  
 Chase, William B., Jr., Des Moines  
 Chase, William B., Sr., Des Moines  
 Chenoweth, Charles E., Mason City  
 Chesnut, Paul F., Winterset  
 Childs, Hal A., Creston (L.M.)  
 Childs, Ratford F., Audubon  
 Chilson, Alvin H., Plymouth  
 Chisholm, Roderick B., Griswold  
 Chittum, John H., Wapello  
 Chittum, Josiah M., North Liberty  
 Choate, Cora W., Marshalltown  
 Christensen, Eunice M., Grand Mound  
 Christensen, Everett D., Grand Mound  
 Christensen, John R., Eagle Grove  
 Christiansen, Charles C., Dixon  
 Christiansen, John E., Durant  
 Christy, Edgar, Glenwood (L.M.)  
 Clapsaddle, John G., Burt  
 Clark, Frank H., Clarinda  
 Clark, George H., Oskaloosa  
 Clark, Howard F., Stuart  
 Clark, James P., Estherville  
 Clark, Oliver T., Keokuk  
 Clark, Orson W., Ordien  
 Clark, Richardson E., Manchester  
 Clark, Thomas D., Victor  
 Clarke, James F., Fairfield (L.M.)  
 Clary, William H., Prescott (L.M.)  
 Clasen, Henry W., Dike  
 Cleary, Hugh G., Fort Madison  
 Cleaves, Prentiss B., Cherokee  
 Closson, Charles L., Welker  
 Cmeyla, Patrick M., Sioux City  
 Cobb, Edwin, Marshalltown  
 Cobb, Elliott C., Sioux City  
 Coddington, James H., Humboldt  
 Coddington, James K., Humboldt  
 Cody, William E., Sioux City  
 Coffin, Lonnie A., Farmington  
 Cogley, John P., Council Bluffs  
 Cole, Elmer J., Woodbine  
 Cole, Fern N., Iowa Falls  
 Cole, Harold P., Thurman  
 Cole, Julia, Ames  
 Colleser, Charles C., Spencer  
 Collins, Harry A., Des Moines  
 Collins, Loren E., Estherville  
 Collins, Robert M., Council Bluffs  
 Conaway, Aaron C., Marshalltown  
 Conney, Roy M., Sergeant Bluff  
 Connell, John, Des Moines  
 Connelly, Edgar J., Dubuque  
 Conner, Frank H., Nevada  
 Conner, John D., Nevada  
 Conzett, Donald C., Dubuque  
 Cook, Clarence P., Des Moines  
 Cook, John O., Belle Plaine  
 Cook, Kenneth G., Fairfield  
 Cook, Walter R., Pisrah  
 Cooper, Clark N., Waterloo  
 Cooper, Gladys A., Red Oak  
 Cooper, James S., Burlington  
 Cooper, Jay C., Villisca  
 Cooper, Raymond E., Keokuk  
 Cooper, Thaddeus C., Ordien  
 Cooper, Wayne K., Iowa City  
 Corbin, Ray L., Luverne  
 Corbin, Sylvanus W., Corydon  
 Corcoran, Louis L., Rock Rapids  
 Corcoran, Thomas E., Rock Rapids  
 Cords, Charles H., Rudd  
 Corn, Henry H., Des Moines  
 Cornell, Corwin S., Knoxville  
 Cornell, Dale D., Greenfield  
 Corns, William, Marshalltown  
 Costello, William E., Dubuque  
 Coughlan, Charles H., Fort Dodge (Jefferson Barracks, Missouri)  
 Coughlan, Daniel W., Des Moines  
 Courshon, Benjamin, Sioux City  
 Courter, Willard O., Springville  
 Cowan, John A., Sioux City  
 Cowgill, Frank W., Nevada  
 Cox, Elmer L., Moulton  
 Crabb, George M., Mason City  
 Craig, James A., Keosauqua  
 Crain, Lewis F., Deep River (L.M.)  
 Crain, Wendell M., Deep River (L.M.)  
 Crane, Mattie P., Holstein  
 Crawford, Jennings, Cedar Rapids  
 Crawford, Robert H., Burlington  
 Cressler, Frank E., Churdan  
 Cretzmeyer, Charles H., Algona  
 Cretzmeyer, Francis X., Emmetsburg  
 Crew, Arthur E., Marion  
 Crew, Philip I., Marion  
 Crew, William F., Massena  
 Cronk, Charles H., Bloomfield (L.M.)  
 Cronk, Clara K., Bloomfield (L.M.)  
 Crow, George B., Burlington  
 Crow, Ira N., Fairfield  
 Crowder, Roy E., Sioux City  
 Crowell, Edwin A., Jr., Iowa City  
 Crowley, Daniel F., Des Moines  
 Crum, John R., Van Horne  
 Crumpton, Robert C., Webster City  
 Cruzen, John L., Barnes City  
 Culbertson, Robert A., St. Ansgar (Little Rock, Arkansas)  
 Cullen, Stuart C., Iowa City  
 Cullison, Robert M., Dayton, Ohio  
 Cunningham, Melvin B., Norwalk  
 Cusick, George W., Princeton  
 Cutler, Roy H., Little Sioux  
 Dahl, Harry W., Des Moines  
 Dahlbo, John E., Sutherland  
 Dahlquist, Ralph M., Decorah  
 Daily, Milton, Sioux City (L.M.)  
 Dakin, Channing E., Mason City (L.M.)  
 Dales, John A., Sioux City (L.M.)  
 Daly, James J., Decorah (L.M.)  
 Danielson, May, Iowa City  
 Danley, Roy C., Hamburg  
 Darling, John P., Des Moines  
 Darrow, Clarence A., Dubuque  
 Daut, Walter W., Muscatine  
 Davey, William P., Emmetsburg  
 Davidson, Lawrence L., Lake City  
 Davidson, Thorald E., Mason City  
 Davis, Arthur E., Seymour  
 Davisson, Robert R., Winterset (L.M.)  
 Dawson, Emerson B., Fort Dodge  
 Day, Charles S., Cedar Rapids  
 Day, Philip M., Oskaloosa  
 Day, William E., Clarksville  
 Dean, Abbott M., Council Bluffs  
 Dean, Frank W., Council Bluffs (L.M.)  
 Dean, Gilbert O., Iowa City  
 Dean, Ray H., Washington (L.M.)  
 Dean, William F., Osceola  
 de Bey, John G., Orange City  
 DeCicco, Ralph, Des Moines  
 Decker, Henry G., Des Moines  
 Decker, Jay C., Sioux City  
 Deering, Albert B., Boone  
 Deering, John S., Onawa  
 DeGowin, Elmer L., Iowa City  
 Dennison, John C., Bellevue (L.M.)



- Denny, Thomas C., Des Moines (L.M.)  
 DeShaw, Earl H., Monticello  
 Deters, Donald C., Schaller (Camp Claiborne, Louisiana)  
 Deur, Sherman J., Iowa City  
 Dewees, Frank L., Keokuk  
 Dewey, Jay R., Schaller  
 DeWitt, Charles H., Jr., Macedonia  
 DeWitt, Franklin T., Nemaha  
 DeYarman, Kyle T., Morning Sun  
 DeYoung, George M., George  
 DeYoung, Ward A., Glenwood  
 Dickey, Claude G., Des Moines  
 Diddle, Albert W., Iowa City  
 Diddy, Keith W., Perry  
 Dierker, Bernard J., Fort Madison  
 Dierker, Frank H., Fort Madison  
 Dimond, Charles A., Keokuk  
 Dimond, Dorothy S., Albany, Illinois  
 Dimsdale, Lewis J., Iowa City  
 Dingman, Marshal E., Urbana  
 Dirks, Maitland S., Phoenix, Arizona  
 Distner, Martin E., Colesburg  
 Ditto, Boyd L., Burlington  
 Dixon, George L., Tucson, Arizona (L.M.)  
 Doane, Grace O., Des Moines  
 Dobias, Stephen G., Chelsea  
 Dobson, Richard A., Sioux City  
 Doering, Valentine T., Fort Madison  
 Dolan, Henry F., Anamosa  
 Dolmage, George F., Buffalo Center  
 Dolmage, G. Howard, Buffalo Center  
 Donahue, James C., Centerville  
 Donelan, James M., Glenwood (L.M.)  
 Donlan, Eugene V., Clinton  
 Donnell, John W., Independence  
 Donnelly, William L., Davenport  
 Donohoe, Anthony P., Davenport  
 Donohue, Edmund S., Sioux City  
 Donovan, Michael J., Perry\*  
 Donovan, William H., Iowa City  
 Doolen, Glen W., Davenport  
 Doolittle, Russell C., Des Moines  
 Dorner, Ralph A., Iowa City  
 Dorsey, Thomas J., Fort Dodge  
 Doss, William N., Leon  
 Down, Howard I., Sioux City  
 Downing, James A., Des Moines  
 Downing, Leroy M., Cedar Rapids  
 Downing, Wendell L., Le Mars  
 Downing, William L., Moulton (L.M.)  
 Doyle, Joseph L., Sigourney  
 Dressler, John B., Ida Grove  
 Drew, Edward J., Des Moines  
 Driver, Richard W., Waterloo  
 Droz, A. Keith, Washington  
 Dubrow, James L., Des Moines  
 Dulin, Evelyn H., Iowa City  
 Dulin, John A., Sigourney  
 Dulin, John W., Iowa City  
 Dulin, Tarana J. G., Sigourney  
 Duling, Raymond J., Sioux City  
 Dulmes, Abraham H., Klemme  
 Dunkel, George K., Fairfield  
 Dunkelberg, Elmer I., Waterloo  
 Dunn, Francis C., Cedar Rapids  
 Dunn, James, Davenport  
 Durfee, Max L., Cedar Falls  
 Durrill, Everett L., Fort Madison  
 Durdieker, Stanley W., Des Moines  
 Dutton, Dean A., Van Horne  
 Dvorak, Joseph E., Sioux City  
 Dwyer, Bernard B., Preston  
 Dwyer, Robert E., Clinton  
 Dyson, James E., Des Moines  
 Earl, Warren Z., Sioux City  
 Ebersole, Francis F., Mt. Vernon  
 Edgington, Frank D., Spencer  
 Edmonds, Charles W., Bedford  
 Edstrom, Henry, Dubuque  
 Edwards, Charles V., Council Bluffs  
 Edwards, James F., Ames  
 Edwards, Ralph R., Centerville  
 Egan, Thomas J., Bancroft  
 Egbert, Daniel S., Atlantic (Fort Snelling, Minnesota)  
 Eggermayer, George W., Elliott  
 Eggleston, Alfred A., Burlington  
 Egloff, William C., Mason City  
 Eiel, Hans E., Buffalo Center (L.M.)  
 Eiel, John O., Osage  
 Eiel, Merrill O., Osage  
 Eischeid, Rudolph J., Dubuque  
 Eland, Thomas L., Letts  
 Eller, Lancelot W., Kanawha  
 Elliott, Olin A., Des Moines  
 Elliott, Vance J., Knoxville  
 Elliott, William J., Dawson  
 Ellis, Howard G., Des Moines  
 Ellison, George M., Clinton  
 Ellyson, Charles W., Waterloo  
 Ellyson, Craig D., Waterloo  
 Elmquist, Homer S., Iowa City  
 Elson, Veryl J., Danbury  
 Elvidge, George P., Perry  
 Ely, Francis A., Des Moines  
 Emerson, Edward L., Muscatine  
 Engle, Harry P., Newton  
 Ennis, Harry H., Decorah  
 Ensley, Bruce, Shell Rock  
 Entringer, Albert J., Dubuque (Camp Murray, Washington)  
 Entz, F. Harold, Waterloo  
 Ernst, Floyd W., New Albin  
 Erskine, Arthur W., Cedar Rapids  
 Ervin, Lindsay J., Des Moines (Brownwood, Texas)  
 Eslick, Louis E., Rockwell City\*  
 Evans, Harold J., Davenport  
 Evans, John G., New Hartford (L.M.)  
 Evans, Titus C., Iowa City  
 Evans, William I., Sac City  
 Everall, Bruce B., Monona  
 Eversmeyer, Benjamin E., Muscatine  
 Everson, Gustave A., Rolfe  
 Faber, Luke A., Dubuque  
 Fail, Charles S., Jr., Adel  
 Fallows, Howard D., Mason City (L.M.)  
 Farlow, Charles T., Farnhamville  
 Farnham, Alfred J., Traer  
 Farnsworth, Harold E., Storm Lake  
 Farnum, Earl P., Sibley  
 Faust, John H., Manson  
 Fay, Oliver J., Des Moines  
 Fee, Charles H., Denison  
 Fee, Knight E., Toledo  
 Feightner, Robert L., Fort Madison  
 Feller, Alto E., New York, N. Y.  
 Fellows, Joseph G., Ames  
 Fellows, Liberty E., Newton  
 Felter, Allan G., Van Meter  
 Fenlon, Leslie K., Clinton  
 Fenton, Charles D., Bloomfield  
 Fenton, Robert L., Centerville  
 Ferlic, Rudolph J., Lake View  
 Field, George A., Des Moines  
 Field, Grace E. Williams, Nashville, Tenn.  
 Fields, Robert B., La Porte City  
 Files, Edward H., Cedar Rapids  
 Fillenwarth, Floyd H., Charles City  
 Findley, William J. K., Sac City (L.M.)  
 Fisch, Roman J., Le Mars  
 Fisher, William C., Williamson  
 Fitzgerald, Joseph D., Sloan  
 Fitzpatrick, Dennis F., Iowa City  
 Flater, Norman C., Floyd  
 Fleck, Warren L., Albuquerque, New Mexico  
 Fleischman, Abraham G., Des Moines  
 Fletcher, Frederick W., Hinton  
 Flickinger, Roger R., Mason City  
 Flocks, Rubin H., Iowa City  
 Floersch, Eugene B., Council Bluffs  
 Floyd, Mark L., Iowa City  
 Foley, Fred C., Newell  
 Foley, Walter E., Davenport  
 Foltz, Eloise G., Perry  
 Fordyce, Frank W., Des Moines  
 Forsyth, Manley, Fremont  
 Foster, Jess W., Ankeny  
 Foster, Morgan J., Cedar Rapids  
 Foster, Samuel T., Adel  
 Foster, Warren H., Clinton  
 Foster, Wayne J., Cedar Rapids  
 Foulk, Frank E., Des Moines  
 Fowler, Charles C., Lovilia  
 Fowler, Willis M., Iowa City  
 Fox, Charles I., Pella (L.M.)  
 Fox, Ray A., Charles City  
 Franchere, Chetwynd M., Mason City  
 Frank, Louis J., Sioux City  
 Frank, Owen L., Maquoketa  
 Franklin, George W., Jefferson  
 Fransco, Peter P., Ruthven  
 Fraser, John H., Monticello  
 Frech, Raymond F., Newton  
 Frederickson, Adolph R., Lansing  
 Freligh, Clarence N., Waucoma  
 French, Charles H., Cedar Rapids (L.M.)  
 French, Royal F., Marshalltown  
 French, Valiant D., Carson  
 Frey, Harry E., Fairfield  
 Fritchen, Arthur F., Decorah  
 Fritschel, Godefrey C., Dubuque  
 Fritz, Lafe H., Dubuque  
 Fry, John L., Kalona  
 Fuerste, Frederick, Dubuque  
 Fuller, Frank M., Keokuk  
 Fullerton, Oscar L., Redding (L.M.)  
 Fullgrabe, Emil A., Indianola  
 Fulliam, Edmond B., Jr., Muscatine  
 Furgerson, Lee B., Waterloo  
 Gaard, Rasmus E., Radcliffe  
 Galinsky, Della, Sioux City  
 Galinsky, Leon J., Oakdale  
 Gallagher, John P., Oelwein  
 Galman, James J., Hospers  
 Galvin, Robert J., Oelwein  
 Gambee, Eric J., Earling  
 Gamble, Robert A., Madrid  
 Gamet, Elmo E., Lamoni  
 Ganoe, James O., Ogden  
 Gantz, Albert J., Greenfield  
 Ganzhorn, Harold L., Mapleton  
 Gardner, Harold O., Waterloo  
 Gardner, John R., Lisbon  
 Gardner, Paul E., New Hampton  
 Garside, Arthur A., Davenport  
 Gauger, John W., Early  
 Gaukel, Leo A., Onawa  
 Gaumer, James S., Fairfield  
 Gearhart, George W., Springville  
 Geeseka, Otto A., Mt. Pleasant (L.M.)  
 Gelfand, Ben B., Sioux City  
 George, Everett M., Des Moines  
 George, Joseph, Dows  
 Gerken, James F., Waterloo  
 Gernsey, Merrit N., Waverly  
 Gerstman, Herbert, Marion  
 Gessner, Frederick W., Dysart  
 Getty, Everett B., Primghar  
 Gibbon, William H., Sioux City  
 Gibson, Chelsea D., Lake View  
 Gibson, Douglas N., Des Moines  
 Gibson, Paul E., Des Moines  
 Gibson, Preston E., Davenport  
 Gifford, Albert K., Cedar Rapids  
 Giles, George C., Oakland  
 Gilfillan, Bruce L., Keokuk  
 Gilfillan, Clarence D. N., Eldon  
 Gilfillan, George W., Bloomfield  
 Gilfillan, Homer J., Cantril  
 Gillespie, Chauncey M., Melcher  
 Gillespie, Hamilton S., Sioux City  
 Gillett, Francis A., Oskaloosa  
 Gillies, Carl L., Iowa City  
 Gilmor, Benjamin F., Red Oak  
 Gingles, Earl E., Onawa  
 Gittins, Thomas R., Sioux City  
 Gittler, Ludwig, Fairfield  
 Givens, Hezekiah F., West Bend  
 Glascock, Thomas J., Hawarden  
 Glesne, Otto N., Fort Dodge  
 Gleysteen, Derk J., Alton  
 Gleysteen, Rodney R., Alton (San Diego, California)  
 Gloeckler, Bernhard B., Mt. Pleasant  
 Glomset, Daniel J., Des Moines  
 Goad, Robley R., Muscatine  
 Goen, Edwin J., Manchester  
 Goenne, William C., Davenport  
 Goggin, John G., Ossian  
 Goldberg, Louie, Des Moines  
 Goltry, Charles F., Russell

- Goodenow, Sidney B., Colo  
 Goodrich, Joseph A., Des Moines  
 Gordon, Arnold M., Des Moines  
 Gorrell, Ralph L., Clarion  
 Gottlieb, Jacques S., Iowa City  
 Gottsch, Erwin J., Shenandoah  
 Gould, George R., Conrad  
 Gould, Isaac L., Kellogg  
 Gower, Walter E., Pocahontas  
 Graber, Harold E., Fairfield  
 Graening, Charles H., Waverly (L.M.)  
 Graening, Paulus K., Waverly  
 Graham, George W., Collins  
 Graham, James W., Sioux City  
 Graham, Walter C., Sioux City  
 Grant, Cecil C., Cedar Falls  
 Grant, John G., Ames  
 Gray, Henry A., Keokuk  
 Gray, Howard D., Des Moines  
 Gray, Ralph E., Eldora  
 Gray, Samuel T., Albia (L.M.)  
 Grayston, Jesse T., Cedar Rapids  
 Greene, James A., Iowa City  
 Greenleaf, William S., Atlantic  
 Greenlee, Max R., Oskaloosa  
 Greteman, Theodore J., Iowa City  
 Griffin, Clark C., Jr., Vinton (L.M.)  
 Griffin, Frank L., Baldwin  
 Griffin, John M., Des Moines  
 Griffin, Sara M. F., Manson  
 Grimm, Peter G., Spirit Lake  
 Grinley, Andrew V., Rockwell City  
 Groman, August, Odebolt (L.M.)  
 Gross, Erwin G., Iowa City  
 Grossman, Milton, Sioux City  
 Grossman, Raymond S., Marshalltown  
 Grossmann, Edward B., Orange City  
 Grothaus, Dell L., Delta  
 Grubb, Merrill W., Galva  
 Gunn, Ross E., Boone  
 Gurau, Henry H., Des Moines  
 Gutch, Roy C., Chariton  
 Gutch, Thomas E., Albia  
 Hagen, Edward F., Decorah  
 Haines, Diedrich J., Des Moines  
 Haisch, Lily K., Dubuque  
 Haisch, Otto E., Dubuque  
 Hale, Albert E., Dougherty  
 Hale, William H., Iowa City  
 Hall, Bonnybel A., Maynard  
 Hall, Cluley C., Maynard  
 Hall, Harry P., Atlantic  
 Halloran, William H., Audubon  
 Halpin, Lawrence J., Cedar Rapids  
 Hamilton, Benjamin C., Jefferson (L.M.)  
 Hamilton, Benjamin C., Jr., Jefferson  
 Hamilton, Cecil V., Garner  
 Hamilton, Harriett S., Council Bluffs  
 Hamilton, Henry H., Cedar Rapids  
 Hamilton, William F., Marshalltown  
 Hamstreet, Wilbur F., Titonka  
 Hanchett, W. McMicken, Council Bluffs  
 Hancock, John C., Dubuque  
 Hand, William C., Hartley  
 Hands, Sidney G., Davenport  
 Hankey, Daniel C., Council Bluffs  
 Hanna, John T., Burlington  
 Hansell, William, Ottumwa (L.M.)  
 Hansell, William W., Des Moines  
 Hansen, Fred A., Red Oak  
 Hansen, Niels M., Des Moines  
 Hansen, Robert F., Forest City  
 Hansen, Robert R., Marshalltown  
 Hanske, Edward A., Bellevue  
 Hanson, Frank H., Magnolia  
 Hanson, Laurence C., Jefferson  
 Hanson, Russell R., Storm Lake  
 Hardin, John F., Bedford  
 Hardin, Robert C., Iowa City (Camp Claiborne, Louisiana)  
 Hardwig, Oswald C., Waverly  
 Harken, Conreid R., Osceola  
 Harkness, Gordon F., Davenport  
 Harlan, Charles D., Keswick  
 Harlan, Martin E., Onawa  
 Harman, Clarence, Trenton, Missouri  
 Harman, Dean W., Glenwood  
 Harnagel, Edward J., Des Moines  
 Harp, John F., Prairie City (L.M.)  
 Harpel, Kate S., Boone  
 Harper, Edna K. S., Greenfield  
 Harriman, Walter F., Sioux City  
 Harrington, Arlan F., Cedar Rapids  
 Harrington, Raymond J., Sioux City  
 Harris, Clinton E., Grinnell  
 Harris, Donald M., LeMars  
 Harris, Grove W., Marshalltown  
 Harris, Herbert H., Battle Creek  
 Harris, Ray R., Dubuque  
 Harris, Robert H., Mason City  
 Harrison, Glenn E., Mason City (Little Rock, Arkansas)  
 Hart, William E., Odebolt  
 Hartley, Byron D., Mt. Pleasant  
 Hartman, Frank T., Waterloo (L.M.)  
 Hartman, Howard J., Waterloo  
 Hartung, Walter, Philadelphia, Pa.  
 Hasek, Victor H., Cedar Rapids  
 Hastings, John C., Elma  
 Hatch, Alice H., Des Moines (L.M.)  
 Haugen, Albert I., Ames  
 Haumeder, Hans, New Hampton  
 Haumeder, Maria E., New Hampton  
 Havlik, Aloysius J., Tama  
 Hawley, Olin B., Corning  
 Hayek, John M., Des Moines  
 Haygood, Marvin F., Des Moines  
 Haymond, Harold E., Perry  
 Hayne, Willard W., Paullina  
 Hazard, Charles M., Arlington  
 Hazlet, Kenneth K., Iowa City  
 Heady, Conda C. C., Bloomfield (L.M.)  
 Heald, Clarence L., Sigourney  
 Healy, Maurice A., Boone  
 Healy, Maurice J., Boone  
 Heathman, Frank E., Pocahontas  
 Hecker, Frederick A., Ottumwa  
 Hecker, John T., Cedar Rapids  
 Hedgecock, Lewis E., Hampton  
 Heeren, Ralph H., Iowa City  
 Heetland, Louis H., Sibley  
 Heffernan, Chauncey E., Sioux City  
 Hegg, Lester R., Rock Valley  
 Heilman, Ernest S., Ida Grove (L.M.)  
 Heise, Carl A., Missouri Valley  
 Heitzman, Paul O., Burlington  
 Heles, John B., Dubuque  
 Helgesen, Peter A., Lake Mills  
 Henderson, Lauren J., Cedar Falls (Fort Ord, California)  
 Henderson, Walker B., Oelwein  
 Hendrickson, Alvin H., Sioux City  
 Henely, Edmund, Nora Springs  
 Henkin, John H., Sioux City  
 Henneger, William A., Dubuque  
 Hennes, Raphael J., Oxford  
 Hennessy, Felix A., Minneapolis, Minn.  
 Hennessy, J. Donald, Council Bluffs  
 Hennessy, Maurice C., Council Bluffs  
 Henning, Garold G., Milford (Fort Lewis, Washington)  
 Henry, Clyde A., Farson  
 Henry, Hiram B., Des Moines  
 Herman, John C., Boone  
 Hermence, George E., Marshalltown  
 Hermesen, Paul J., Bronson  
 Herny, Peter M., Prairie City  
 Herrick, Thomas G., Gilmore City  
 Herrmann, Christian H., Jr., Amana  
 Herron, David A., Alta  
 Hersch, Thomas F., Cedar Rapids  
 Hersey, Nelson L., Independence  
 Hess, Ardo M., West Union  
 Hess, Howard R., Cedar Rapids  
 Hess, William C., Cresco  
 Hessin, A. Laurence, Chicago, Illinois  
 Heusinkveld, Henry J., Jr., Clinton  
 Hibbe, Henry B., Dubuque  
 Hibbs, Fred V., Carroll  
 Hickenlooper, Carl B., Winterset  
 Hickerson, Luther C., Brooklyn  
 Hickman, Charles S., Centerville  
 Hicks, Wayland K., Sioux City  
 Hight, William B., Des Moines  
 Hill, Christine S. E., Council Bluffs  
 Hill, Don E., Clinton  
 Hill, James C., Newton  
 Hill, James W., Mt. Ayr.  
 Hill, Julia F., Pittsburgh, Pennsylvania  
 Hill, Lee F., Des Moines  
 Hills, Henry M., Lamoni (L.M.)  
 Hills, Robert A., Russell  
 Hinrichs, Robert G., Manson  
 Hobart, Francis W., Lake City  
 Hoegen, Joseph A., Wyoming  
 Hoeven, Edward B., Ottumwa  
 Hoffman, Paul M., Tipton  
 Hoffmann, Alfred A., Waterloo  
 Hofmann, William P., Davenport  
 Hofstetter, George, Clinton (L.M.)  
 Hogle, William M., Keokuk  
 Holbrook, Francis R., Des Moines  
 Hollis, Edward L., Marengo  
 Holman, Henry D., Mason City  
 Holmes, Wilson W., Keokuk  
 Holtey, Joseph W., Ossian  
 Homan, Leo J., Riverside  
 Hombach, Walter P., Council Bluffs  
 Hombach, William P., Council Bluffs  
 Hommel, Placido R. V., Elkader  
 Honke, Edward M., Sioux City  
 Hooper, Lester E., Indianola  
 Hope, Frank G., Sioux City  
 Hopkins, David H., Glidden  
 Hornaday, William R., Des Moines  
 Horton, Vincent J., Calmar  
 Hosford, Horace F., Burlington  
 Hospodarsky, Leonard J., Ridgeway  
 Hotz, Edward J., Strawberry Point  
 Houghton, Fred W., Council Bluffs\*  
 Houlihan, Jay E., Mason City  
 Houlihan, Francis W., Ackley  
 Houlihan, Thomas J., Ida Grove (L.M.)  
 Householder, Harold A., Winthrop  
 Houser, Blanche W., Cedar Rapids  
 Houser, Cass T., Cedar Rapids  
 Houston, Bush, Nevada  
 Hovde, Rieber C., Davenport  
 Hovenden, John H., Laurens  
 Howard, Fred H., Strawberry Point  
 Howard, Lloyd G., Council Bluffs  
 Howard, William H., Decorah  
 Howe, James M., Hillsboro  
 Howe, Lysle C., Muscatine  
 Howell, Chauncey W., Grinnell\*  
 Howell, Elias B., Ottumwa  
 Howland, Charles F., Des Moines  
 Hubbard, Frank A., Columbus Junction  
 Hudek, Joseph W., Garnaaville  
 Huffman, Carroll W., Iowa City  
 Hughes, Robert O., Ottumwa  
 Hull, Henry C., Jr., Washington (L.M.)  
 Huntley, Charles C., Avoca  
 Huntoon, Gardner A., Des Moines\*  
 Hurd, Charles A., Northwood  
 Hurevitz, Hyman M., Davenport  
 Huston, Daniel F., Burlington  
 Huston, Herbert M., Ruthven  
 Huston, Marshall D., Centerville  
 Huston, Samuel W., Mt. Pleasant  
 Hyatt, Charles N., Albia (L.M.)  
 Hyatt, Charles N., Jr., Humeston  
 Hyndman, Olan R., Iowa City  
 Ihle, Charles W., Cleghorn  
 Ihle, Charles W., Jr., Cleghorn (Fort Snelling, Minnesota)  
 Ingham, Paul G., Mapleton  
 Ingraham, David R., Sewal  
 Irish, Thomas J., Forest City  
 Irwin, Charles E., Woodward  
 Irwin, Ralph L., Iowa City  
 Isenberg, Bertice A., Lohrville  
 Ivins, Harry M., Cedar Rapids  
 Jackson, James M., Jefferson  
 Jackson, James S., Mt. Pleasant  
 Jackson, Robert L., Iowa City  
 Jacoby, James A., Burlington  
 Jaenicke, Kurt, Clinton  
 James, Audra D., Des Moines  
 James, David W., Kamrar  
 James, Lora D., Fairfield  
 James, Peter E., Elkhorn  
 James, Roger A., Allison  
 Jameson, Robert E., Davenport



- Janse, Phillip V., Algona  
 Jansonius, John W., Eldora (Fort Knox, Kentucky)  
 January, Lewis E., Iowa City  
 Jardine, George A., New Virginia  
 Jarvis, Fred J., Oskaloosa  
 Jarvis, Harry D., Chariton  
 Jay, Leon D., Waverly  
 Jeans, Philip C., Iowa City  
 Jeffries, Roy R., Waukon  
 Jenkins, George A., Albion  
 Jenkins, George D., Burlington  
 Jenkinson, Ernest A., Sioux City (L.M.)  
 Jenkinson, Harry R., Iowa City  
 Jenks, Alonzo L., Jr., Des Moines  
 Jensen, Arnold L., Council Bluffs (Fort Sam Houston, Texas)  
 Jensen, Arthur E., Humboldt  
 Jensen, LeRoy E., Audubon  
 Jepson, William, Sioux City (L.M.)  
 Jerdee, Ingebrecht C., Clermont  
 Jessup, Arthur E., Diagonal  
 Jessup, Parke M., Muscatine  
 Jinderlee, Joseph W., Cresco  
 Johann, Albert E., Des Moines  
 Johnson, Aaron Q., Sioux City  
 Johnson, Albert P., Sigourney (L.M.)  
 Johnson, Aldis A., Council Bluffs  
 Johnson, Chester H., Cherokee  
 Johnson, George M., Marshalltown  
 Johnson, Glenn R., Ottumwa  
 Johnson, Harvey A., Atlantic  
 Johnson, J. A. William, Newton  
 Johnson, Jonathan, Alden  
 Johnson, Melvin T., Lake Mills  
 Johnson, Norman M., Clarinda  
 Johnson, Robert J., Iowa Falls  
 Johnson, William A., Alden  
 Johnston, C. Harlan, Des Moines (Little Rock, Arkansas)  
 Johnston, Florence D., Cedar Rapids  
 Johnston, George B., Estherville  
 Johnston, Harry L., Ames  
 Johnston, Helen, Des Moines  
 Johnston, Howard H., Hampton  
 Johnston, Kenneth L., Oskaloosa  
 Johnston, Thomas H., Spencer  
 Johnston, Wayne A., Dubuque  
 Johnstone, Alexander A., Keokuk  
 Jones, Cecil C., Des Moines  
 Jones, Charles L., Gilmore City  
 Jones, Clare C., Spencer  
 Jones, Harry J., Cedar Rapids  
 Jones, Henry D., Schleswig  
 Jones, Jesse L., Manchester  
 Jones, Lewis H., Wall Lake (L.M.)  
 Jones, Thomas S., Waukegan  
 Jongewaard, Albert J., Jefferson  
 Jongewaard, Jeannette, Jefferson  
 Jordan, Carl F., Des Moines  
 Jordan, John W., Maquoketa  
 Jowett, John R., Clinton  
 Joyner, Nevill M., Fort Dodge  
 Joynt, Albert J., Waterloo  
 Joynt, Martin J., Le Mars  
 Joynt, Michael F., Marcus  
 Judd, Addison L., Kanawha  
 Junger, Emil C., Soldier  
 Kaach, Harry F., Clinton  
 Kabrick, Ola A., Grandview  
 Kadel, Merl A., Tipton  
 Kahler, Hugo V., Reinbeck  
 Kane, Thomas E., Boone  
 Kaplan, David, Sioux City  
 Kas, Thomas D., Sutherland  
 Kassmeyer, John C., Dubuque  
 Kast, Donald H., Des Moines  
 Katherman, Charles A., Sioux City  
 Kauffman, William A., Marshalltown  
 Kaufman, Ernest L., Fort Atkinson  
 Keane, John L., Dyersville  
 Keech, Roy K., Cedar Rapids  
 Keefe, Patrick E., Sioux City  
 Keen, Burlin E., Des Moines  
 Keeney, George H., Mallard  
 Keith, John J., Marion  
 Kelley, Edmund J., Des Moines  
 Kelley, Laurence E., Des Moines  
 Kellogg, Orson A., Dows  
 Kelly, Dennis H., Des Moines  
 Kelly, Harry D., Council Bluffs  
 Kelly, Joseph I., Burlington (L.M.)  
 Kenefick, John N., Algona  
 Kennedy, Edward M., New Hampton  
 Kennedy, Edward P., Swaledale  
 Kennedy, Elizabeth S., Oelwein  
 Kennedy, William C., Somers  
 Kern, Lester C., Waverly  
 Kerr, H. Dabney, Iowa City  
 Kerr, Johnston H., Akron  
 Kerr, William, Randolph  
 Kerr, William H., Hamburg  
 Kershner, Frank O., Clinton  
 Kersten, Ernest M., Fort Dodge  
 Kerwick, Joseph M., New Hampton  
 Kessel, George, Cresco (L.M.)  
 Kessler, John B., Cedar Rapids (L.M.)  
 Kestel, John L., Waterloo  
 Kettelkamp, Enoch G., Monona  
 Keyser, Ralph E., Marshalltown  
 Kieck, Ernest G., Cedar Rapids  
 Kiesau, Frederick W., Postville  
 Kiesau, Milton F., Postville  
 Kiesling, Harry F., Lehigh  
 Kilgore, Benjamin F., Des Moines  
 Kimball, John E., West Liberty  
 Kimberly, Lester W., Davenport  
 King, David H., Batavia  
 King, Dean H., Spencer  
 King, Harold N., Hampton, Virginia  
 King, Oran W., Des Moines  
 King, Ross C., Clinton  
 Kingsbury, Charles E., Clarence  
 Kingsbury, Earl L., Keokuk  
 Kirch, Walter A. W., Des Moines  
 Kirkegaard, Smith C., Ringsted  
 Kitson, Walter W., Atlantic  
 Klein, John L., Muscatine (L.M.)  
 Klein, John L., Jr., Muscatine  
 Kleinberg, Henry E., Des Moines  
 Kline, Samuel, Sioux City  
 Klockseim, Roy G., Newton  
 Kluever, Herman C., Fort Dodge  
 Knight, Benjamin L., Cedar Rapids  
 Knight, Edson C., Garwin  
 Knight, Russell A., Rockford  
 Knipe, James B., Armstrong  
 Knipfer, Robert L., Jesup  
 Knoll, Albert H., Dubuque  
 Knopf, Eugene J., Hubbard  
 Knott, Peirce D., Sioux City  
 Knott, Robert C., Sioux City  
 Knowles, Fred L., Fort Dodge  
 Knox, James M., Cedar Rapids  
 Knudsen, Hubert K., Clinton  
 Koch, Fred E., Burlington  
 Koch, George W., Sioux City (L.M.)  
 Koenehan, Eugene O., Eldora  
 Koke, Martin P., Jr., Iowa City  
 Koob, William R., Brayton  
 Kooiker, Herman J., Hull  
 Koontz, Lyle W., Vinton  
 Korfmacher, Edwin S., Grinnell  
 Kornder, Louis H., Davenport  
 Korns, Horace M., Iowa City  
 Koser, Donald C., Cherokee  
 Kottke, Elmer E., Des Moines  
 Krakauer, Max, Davenport  
 Krause, Charles S., Cedar Rapids  
 Krejsa, Oldrich, Cedar Rapids  
 Krenning, Katherine S., Davenport  
 Krepelka, George E., Osage  
 Kreul, Dwight G., Davenport  
 Kriebs, Frank J., Elkport (L.M.)  
 Kriechbaum, Horace T., Davenport  
 Kriechbaum, Walter P., Burlington  
 Kristen, Joe M., Sioux City  
 Krigsten, William, Sioux City (Fort Snelling, Minnesota)  
 Kruckenberg, William G., Mt. Vernon  
 Kruse, Henry W., Rockford  
 Kuhl, Augustus B., Davenport  
 Kuhl, Augustus B., Jr., Davenport  
 Kuhn, Leo C., Decorah  
 Kuifert, John H., Marion, Indiana  
 Kulp, Raymond R., Davenport  
 Kuntz, George S., Sibley  
 Kurth, Clarence J., Council Bluffs  
 Kyle, William S., Washington  
 Labagh, Nicholas W., Mystic  
 Lacey, Thomas B., Glenwood  
 LaDage, Leo H., Davenport  
 Ladd, Fred G., Cedar Rapids  
 La Force, Edward F., Burlington (L.M.)  
 Lage, Raleigh H., Iowa City  
 Laidley, Wallace G., Ogden  
 Laird, John W., Mt. Pleasant  
 Lamb, Frederick H., Davenport  
 Lamb, Harry H., Davenport  
 Lambach, Frederick, Davenport (L.M.)  
 Lambert, Avery E., (Ph.D.), Iowa City  
 Lampe, Elmer L., Bellevue  
 Lande, Jacob N., Sioux City  
 Langworthy, Henry G., Dubuque  
 Lannon, James W., Clear Lake (Little Rock, Arkansas)  
 Lapsley, Robert M., Keokuk  
 Larimer, Robert N., Sioux City  
 Larsen, Elmer A., Centerville  
 Larsen, Harold T., Fort Dodge  
 Larson, Andrew G., Dickens  
 Larson, Eloise M., Peoria, Illinois  
 Larson, John B., Laurens  
 Larson, Lester E., Decorah  
 Larson, Marvin O., Hawarden (Camp Robinson, Arkansas)  
 Lashbrook, Elam E., Estherville  
 Laughhead, Charles A., Iowa City  
 Laughlin, Kenneth A., Iowa City  
 Laughlin, Ralph M., Tipton  
 Launder, Frank T., Garwin  
 Launder, Lloyd H., Marshalltown  
 Lawrence, Joseph W., Dubuque  
 Lease, Nimrod J., Crawfordsville (L.M.)  
 Lee, Frank W., Osage  
 Lee, Gisle M., Thompson (L.M.)  
 Leehey, Florence P., Oelwein  
 Leehey, Paul J., Independence  
 Leet, Hanson H., Iowa City  
 Leffert, Frank B., Centerville  
 Lehman, Emory W., Des Moines  
 Leighton, Isaac W., Iowa City  
 Leighton, Lewis L., Fort Dodge  
 Leik, Donald W., Dubuque  
 Leinbach, Samuel P., Belmond  
 Leinfelder, Placidus J., Iowa City  
 Leiter, Herbert C., Sioux City  
 Lekwa, Alfred H., Story City  
 Lemon, Kenneth M., Oskaloosa  
 Lenaghan, Robert T., Clinton  
 Lenzmeier, Albert J., Davenport  
 Leonard, Bertram B., Jr., Anthon  
 Leonard, Earl R., Lake Park  
 Leonard, Frederick S., Dubuque  
 Leserman, Lester K., Rolfe  
 Lessenger, Ernest J., New London  
 Lessenger, William S., Mt. Pleasant (L.M.)  
 Lewis, Samuel J., Columbus Junction  
 Lewis, William B., Webster City  
 Lichter, Theodore W., Edgewood  
 Liechty, Ernest J., Kingsley  
 Lierle, Dean M., Iowa City  
 Liken, John A., Creston  
 Limbert, Edwin M., Council Bluffs  
 Limburg, J. Irwin, Jefferson  
 Limburg, John I., Jr., Jefferson  
 Link, Martha A. M., Dubuque  
 Linn, Ellis G., Des Moines  
 Liska, Edward J., Ute  
 Lister, Kenneth E., Chariton  
 Little, Luther W., Atkins  
 Lloyd, John M., Washington  
 Locher, Robert C., Cedar Rapids  
 Lock, Arthur L., Rock Valley  
 Lockhart, Harold A., Cedar Rapids  
 Loeck, John F., Aurora  
 Loes, Anthony M., Dubuque  
 Lohman, Frederick H., Waterloo  
 Lohmann, Carl J., Burlington  
 Lohr, Oscar C., Churdan  
 Lohr, Phillips E., Churdan  
 Long, Draper L., Mason City  
 Longwell, Freeman H., Iowa City  
 Longworth, Wallace H., Boone  
 Loomis, Francis W., Shannon City  
 Loosbrock, John F., Lacona

- Loose, David N., Maquoketa (L.M.)  
 Lorfeld, Gerhard W., Davenport  
 Losh, Clifford W., Des Moines  
 Lott, Guy A., Osage  
 Lott, Robert H., Carroll  
 Love, Francis L., Iowa City  
 Lovejoy, E. Parish, Des Moines  
 Lovelady, Ralph, Sidney  
 Lovett, Charles E., Lineville  
 Lovett, Earl D., Vinton  
 Loving, Luther W., Estherville  
 Lowder, William, Maquoketa  
 Lowry, Frederick C., Centerville  
 Ludwick, Arthur L., Jr., Waterloo  
 Luehrsmann, Bernard C., Dyersville  
 Luehrsmann, Bernard H., Dyersville  
 Luginbuhl, Christian B., Des Moines  
 Luke, Edward, Coin  
 Lundvick, Arthur W., Gowrie  
 Luse, Ralph F., Clinton  
 Luthy, Karl R., Oskaloosa  
 Lutton, John D., Sioux City  
 Lynch, Robert J., Des Moines  
 Lynn, Arthur R., Marshalltown  
 Lynn, Clarence E., Dubuque  
 Lytle, Carl C., Dubuque  
 MacDougal, Roderick F., Cedar Rapids  
 MacEwen, Ewen M., Iowa City  
 Mackie, Donald G., Charles City  
 Mackin, M. Charles, Des Moines (L.M.)  
 MacLeod, Hugh G., Greene  
 Macrae, James G., Creston  
 Madden, William D., Clinton\*  
 Madsen, Henry V., San Haven, North Dakota  
 Margaret, Ernest C., Glenwood  
 Magarian, Sennacherib M., Des Moines  
 Magee, Emery E., Waterloo  
 Magoun, Charles E., Sioux City  
 Mahin, Frank M., Ainsworth  
 Maiden, Sydney D., Council Bluffs  
 Mailliard, Robert E., Watertown, N. Y.  
 Maire, Eugene J., Vail  
 Maloney, Arthur P., Fonda (L.M.)  
 Maloy, Wayland H., Shenandoah  
 Manahan, Charles A., Vinton  
 Mantle, William B., Albion  
 Mantz, Russell L., Cedar Rapids  
 Maplethorpe, Charles W., Toledo  
 Marble, Edwin J., Marshalltown  
 Marble, Ira A., Sheffield  
 Marble, Pearl L., Liscomb  
 Marble, Willard P., Marshalltown  
 Marek, Joseph E., Mason City  
 Maresh, George, Iowa City  
 Margolin, Julius M., Perry  
 Marinos, Harry G., Mason City  
 Maris, Cornelius, Sanborn  
 Maris, Gerrit, Hull  
 Maris, William, Sioux Center  
 Marker, John I., Davenport (Fort Leonard Wood, Missouri)  
 Marquis, Fred M., Waterloo  
 Marquis, George S., Des Moines  
 Marr, James, Silver City  
 Marrs, Walford D., Tabor  
 Marsh, William E., Eldora  
 Marston, Charles L., Mason City  
 Martin, George H., Eagle Grove  
 Martin, Hobart E., Clinton  
 Martin, James W., Holstein  
 Martin, John F., Latimer  
 Martin, Lee R., Council Bluffs  
 Martin, Loran M., Fort Dodge  
 Martin, Ronald F., Sioux City  
 Martin, Sidney D., Carroll  
 Mason, Harry P., Wilton Junction  
 Mason, Stella M., Mason City  
 Masson, Hervey F., Washington  
 Mast, Truman M., Washington  
 Matheson, John H., Des Moines  
 Mathias, John P., Mediapolis (L.M.)  
 Mathiasen, Henning W., Neola  
 Matthews, Damon G., Milton  
 Matthews, Robert J., Clarinda  
 Matthey, Carl H., Davenport  
 Matthey, Walter A., Davenport  
 Mattison, George, Jr., Akron  
 Mauer, George A., Le Mars  
 Mauer, Richard E., Laurens  
 Mauritz, Emory L., Des Moines  
 Maxwell, Charles T., Sioux City  
 Maxwell, George B., Davenport  
 Maxwell, John, What Cheer  
 May, George A., Des Moines  
 McAllister, James, Odebolt  
 McBride, James T., Des Moines  
 McBride, Robert H., Sioux City  
 McBurney, George F., Belmond  
 McCall, John H., Allerton  
 McCarl, J. Jay, Sac City  
 McCarthy, Frank D., Sioux City  
 McCartney, William H., Des Moines  
 McCauliff, Guy T., Webster City  
 McClean, Earl D., Des Moines  
 McClintock, John T., Iowa City (L.M.)  
 McClure, Ernest C., Bussey (L.M.)  
 McClure, Gail A., Ames  
 McClurg, F. Haven, Fairfield  
 McConkie, Edwin B., Cedar Rapids  
 McConkie, Willis L., Carroll  
 McConnaughey, James T., Mt. Pleasant  
 McCoy, Harold J., Des Moines  
 McCrary, Warren E., Lake City  
 McCrae, Eppie S., Eddyville  
 McCreedy, Murry L., Brighton  
 McCreery, John W., Whittemore  
 McCreight, George C., Des Moines  
 McCuiston, Harry M., Sioux City  
 McCutchan, Guy R., Indianapolis, Indiana  
 McDaniel, John D., Marengo  
 McDannell, John, Nashua  
 McDonald, Donald J., Des Moines  
 McDonald, James E., Mason City (L.M.)  
 McDowall, Gilbert T., Gladbrook  
 McDowell, William O., Grundy Center  
 McElderry, Donald, Ottumwa  
 McFarland, Guy E., Ames  
 McFarland, Guy E., Jr., Ames  
 McFarland, Julian E., Ames  
 McGilvra, Raymond I., Guthrie Center  
 McGonigle, Bartholomew, Sioux City  
 McGowan, James P., Harlan  
 McGrane, Merle J., New Hampton  
 McGrath, William J., Elkader  
 McGready, Joseph H., Independence (L.M.)  
 McGuire, Roy A., Fairfield  
 McHugh, Charles P., Sioux City  
 McKean, Alexander C., Ladora  
 McKean, Frank F., Allison  
 McKee, Thomas L., Keokuk  
 McKirahan, Josiah R., Wayland  
 McKitterick, John C., Burlington  
 McLaughlin, Charles W., Washington  
 McMahon, George T., Wauke  
 McMahon, Thomas, Lawler (L.M.)  
 McManus, Joseph P., Graettinger  
 McMeans, Thomas W., Davenport  
 McMillen, Arch S., Fort Dodge  
 McMurray, Edward A., Cleveland, Ohio  
 McNamara, Frank P., Dubuque  
 McNamee, Jesse H., Des Moines  
 McNaughton, Luther D., Eagle Grove  
 McPherrin, Henry I., Des Moines  
 McQuillen, Charles W., Charles City  
 McQuiston, J. Stuart, Cedar Rapids  
 McTaggart, William B., Havelock  
 McVay, Melvin J., Lake City  
 Mead, Frank N., Cedar Falls (L.M.)  
 Meany, John F., Rockwell  
 Meentz, Diedrich J., Fort Madison  
 Meffert, Clyde B., Cedar Rapids  
 Meggers, Edward C., McGregor  
 Mehler, Frank R., New London  
 Melgaard, Bennett A., Sioux City  
 Mellen, Robert G., Clinton  
 Melrose, Maurice C., Independence  
 Mengert, William F., Iowa City  
 Mercer, Clifford D., West Union  
 Meredith, Loren K., Des Moines  
 Mereness, Herbert D., Dolliver  
 Merkel, Arthur E., Des Moines  
 Merkel, Byron M., Des Moines  
 Merrick, John H., Cherokee  
 Merrill, Charles H., Oskaloosa  
 Merrill, Nelson, Marshalltown  
 Merritt, Arthur M., Des Moines  
 Mershon, Clinton E., Adel (L.M.)  
 Meyer, Alfred K., Clinton  
 Meyer, George R., Marshalltown (L.M.)  
 Meyer, Milo G., Marshalltown  
 Meyers, Frank W., Dubuque  
 Meyers, Henry A., Davenport  
 Michel, Bernard A., Dubuque (L.M.)  
 Middleton, George M., Davenport  
 Mikelson, Clarence J., Osceola  
 Miller, Brownlow B., Tabor  
 Miller, Chester I., Iowa City  
 Miller, Donald F., Williamsburg  
 Miller, Enos D., Wellman  
 Miller, Johannes J., Ackley  
 Miller, Lawrence A., North English  
 Miller, Oscar H., Estherville  
 Miller, Temple M., Muscatine  
 Miller, Wilbur R., Iowa City  
 Miller, William B., Centerville  
 Millice, Glenn S., Battle Creek  
 Mills, Ernest M., Legrand  
 Mills, Frank W., Ottumwa  
 Miltner, Leo J., Davenport  
 Minassian, Harootune A., Des Moines  
 Minassian, Thaddeus A., Des Moines  
 Miner, James B., Jr., Charles City  
 Miner, James B., Sr., Charles City (L.M.)  
 Missildine, Whitney H., Eagle Grove  
 Missman, Walter F., Klemme  
 Mitchell, Claire H., Indianola  
 Mitchell, Howard E., Minneapolis, Minn.  
 Moen, Harry P., West Union  
 Moen, Stanley T., Hartley  
 Moerke, Robert F., Burlington  
 Moershel, Henry G., Homestead  
 Moes, Matthew J., Dubuque  
 Mol, Henry L., Grundy Center  
 Montgomery, Earl C., Atlantic  
 Montgomery, Guy E., Keota  
 Moon, Barclay J., Cedar Rapids  
 Mooney, Felix P., Jewell  
 Mooney, James C., Independence  
 Moore, Daniel V., Sioux City  
 Moore, Edson E., Camp Lee, Virginia  
 Moore, Edwin A., Harlan\*  
 Moore, Fred, Des Moines\*  
 Moore, Gage C., Ottumwa  
 Moore, Harold H., Ottumwa  
 Moore, Harris C., Martelle  
 Moore, Jesse C., Eldon  
 Moore, Morris, Walnut  
 Moore, Pauline V., Iowa City  
 Moorehead, Giles C., Ida Grove (L.M.)  
 Moorehead, Harold B., Underwood  
 Moran, Thomas A., Melrose  
 Morden, Richard P., Des Moines  
 Morden, Roy R., Des Moines  
 Morgan, Earl E., Sioux City  
 Morgan, Fred B., Clinton  
 Morgan, Harold W., Mason City  
 Morgenthaler, Otis P., Templeton  
 Moriarty, John F., Rock Rapids  
 Moriarty, Lauren R., Villisca (Little Rock, Arkansas)  
 Morris, Zenella N., Stockport (L.M.)  
 Morrison, Edward D., Fort Dodge  
 Morrison, John R., Carroll (Fort Leonard Wood, Missouri)  
 Morrison, John W., Alta  
 Morrison, Orry C., Carroll  
 Morrison, Roland B., Carroll  
 Morse, Charles H., Eagle Grove (L.M.)  
 Morton, Matthew T., Estherville  
 Mosher, Martin L., Jr., West Branch  
 Moskovitz, Julius M., Council Bluffs  
 Moth, Robert S., Council Bluffs  
 Mott, William H., Farmington  
 Moulton, Milo W., Bellevue  
 Mountain, Elmer B., Des Moines  
 Mueller, Emil F., Dyersville  
 Mueller, James A., Fenton  
 Mueller, John J., Dubuque  
 Muench, Virgil O., Nichols  
 Muegan, Robert C., Sioux City  
 Muhs, Emil O., Muscatine  
 Mullmann, Arnold J., Adel  
 Mulsow, Frederick W., Cedar Rapids  
 Mumma, Claude S., Santa Monica, California



- Munden, Ralph E., Cedar Rapids  
Munger, Elbert E., Spencer  
Munger, Elbert E., Jr., Spencer  
Murchison, Kenneth, Sidney  
Murphey, Arlo L., Fredericksburg  
Murphy, Cornelius B., Alton  
Murphy, George C., Waterloo  
Murphy, Joseph J., Cedar Rapids  
Murray, Frederick G., Cedar Rapids  
Murray, Jonathan H., Burlington  
Murtaugh, James E., Charles City  
Myers, Edward M., Boone  
Myers, Judson W., Postville  
Myers, Kermit W., Sheldon  
Naae, Thorleif T., Graettinger  
Nash, Edwin A., Ottumwa  
Nauman, Ernest C., Waterloo  
Neal, Emma J., Cedar Rapids  
Nederhiser, Morgan I., Cascade  
Needles, Roscoe M., Atlantic  
Negus, Cora W., Keswick  
Nelson, Arnold L., Des Moines  
Nelson, Carrol C., Red Oak  
Nelson, Caryl L., Waterloo  
Nelson, Fred L., Ottumwa  
Nelson, Frederick L., Jr., Ottumwa  
Nelson, Harry E., Dayton  
Nelson, Ira D., Toledo  
Nelson, Leo C., Jefferson  
Nelson, Paul O., Emmetsburg  
Nelson, Robert J., Clinton  
Nemec, Joseph J., Cedar Rapids  
Nesler, Alfred B., Dubuque  
Netolicky, Joseph Y., Solon  
Netolicky, Robert Y., Cedar Rapids  
Netolicky, Wesley J., Cedar Rapids  
Neu, Harold N., Sac City  
Neufeld, Frank, Davenport  
Neufeld, Robert J., Davenport  
Neurath, Otto, Sigourney  
Neuzil, William J., Cedar Rapids  
Newell, William C., Ottumwa  
Newland, Don H., Belle Plaine  
Newland, Elmer R., Drakesville  
Newland, Mark A., Center Point  
Newlove, Frank E., Platteville, Wisconsin  
Newman, Cloyce A., Bode  
Newton, Dennis L., Fort Madison  
Niblock, George F., Derby  
Nicholson, Clyde G., Spirit Lake  
Nicoll, Charles A., Panora  
Nicoll, David T., Mitchellville  
Nielsen, Rudolph F., Cedar Falls  
Nielson, Arthur L., Harlan  
Niemann, Theodore V., Brooklyn  
Nierling, Paul A., Cresco  
Noble, Earl H., Clemons  
Noble, Frederick W., Fort Madison  
Noble, Harold F., Fort Madison  
Noble, Lloyd E., Rhodes  
Noble, Nelle S., Des Moines  
Noble, Rnsi P., Cherokee  
Noé, Carl A., Cedar Rapids  
Noé, Charles F., Amana (L.M.)  
Nomland, Ruben, Iowa City  
Noonan, James J., Marshalltown  
Nord, Donald H., Cambridge  
Norem, Walter, Meshed, Iran  
Norman, Edith E., Chattahoochee, Florida  
Norment, John E., Clinton  
North, Frank R., Winfield  
Norton, Alva C., Rockwell City (L.M.)  
Noun, Louis J., Des Moines  
Noun, Maurice H., Des Moines  
Nourse, Leslie M., Des Moines  
Null, Frederick F., Hawarden  
Nyquist, David M., Eldora  
Nysewander, Christian, Des Moines (L.M.)  
Ober, Frank G., Burlington  
Obermann, Charles F., Cherokee  
O'Brien, Cecil S., Iowa City  
O'Brien, Stephen A., Mason City  
O'Connor, Edwin C., Alta Vista  
Odell, Isaac H., Des Moines  
O'Donoghue, Arch F., Sioux City  
O'Donoghue, James H., Storm Lake  
Oelrich, Carl D., Sioux Center  
Oggel, Herman D., Maurice  
O'Keefe, John E., Waterloo (L.M.)  
O'Keefe, Paul T., Waterloo  
Oldag, George C., Paullina  
O'Leary, Francis B., George  
Olsen, Martin I., Des Moines  
Olson, Evelyn M., Winterset  
Olson, Paul F., Dubuque  
Olson, Russell L., Northwood  
O'Neal, Harold E., Tipton  
Osborn, Clarence R., Dexter  
Osinecup, Paul W., Sioux City  
Osnes, Elias N., Readlyn  
Osten, Burdette H., Northwood  
O'Toole, Laurence C., Le Mars  
O'Toole, Thomas J., Eagle Grove  
Ott, Martin D., Davenport  
Otto, Paul C., Fort Dodge  
Overton, Lewis M., Des Moines  
Owen, William R., Osage  
Pace, Arthur E., Toledo (L.M.)  
Padgham, James B., Ocheyedan  
Padgham, John T., Grinnell  
Page, Addison C., Des Moines (L.M.)  
Pagelson, Otto H., Iowa Falls  
Pahlas, Henry M., Dubuque  
Paige, Ralph T., La Porte City  
Painter, Jesse C., Dubuque  
Palmer, Carson W., Guttenberg  
Paragas, Modesto R., Creston  
Parish, John R., Grinnell  
Parish, Ora F., Grinnell (L.M.)  
Park, Elmer R., Sioux City  
Parker, Bernard B., Centerville  
Parker, Edward S., Ida Grove (L.M.)  
Parker, George F., Iowa City  
Parker, James D., Fayette  
Parker, Robert L., Des Moines  
Parker, William W., Floris  
Parry, Roy E., Scranton  
Parsons, Harry C., Grinnell  
Parsons, Irving U., Malvern (L.M.)  
Parsons, John C., Des Moines  
Parsons, Percival L., Traer  
Paschal, George A., Williams  
Pascoe, Paul L., Carroll  
Patterson, Alpheus W., Fonda  
Patterson, John N., Burlington (L.M.)  
Patterson, Roy A., Webster City  
Paul, John D., Anamosa  
Paul, William D., Iowa City  
Paulsen, Herbert B., Harris  
Paulus, Edward W., Iowa City  
(Camp Claiborne, Louisiana)  
Payne, Rosewell H., Exira  
Pearlman, Leo R., Des Moines  
Pearson, George J., Burlington  
Pearson, William W., Des Moines  
Peart, John C., Davenport  
Pease, Herbert, Monticello  
Peasley, Harold R., Des Moines  
Peck, John H., Oakdale  
Peck, Raymond E., Davenport  
Peck, Levin H., Lake City  
Peisen, Conan J., Des Moines  
Pence, James W., Columbus Junction  
Perkins, Franklyn C., Hedrick  
Perkins, Rolla W., Sioux City  
Perley, Arthur E., Waterloo  
Pershing, Frank O., Keota  
Peschau, Waldo E., Cedar Rapids  
Petersen, Emil C., Atlantic  
Petersen, Millard T., Atlantic  
Petersen, Vernon W., Iowa City  
(Camp Claiborne, Louisiana)  
Peterson, August J., Forest City  
Peterson, Evan A., Burlington  
Peterson, Frank R., Iowa City  
Peterson, Ray W., Clear Lake  
Petty, Wallace S., Sioux City  
Pfaff, Richard O., St. Louis, Missouri  
Pfannebecker, William, Sigourney (L.M.)  
Pfeiffer, Eric P., Des Moines  
Pfeiffer, Ernst, Hartley  
Pfeiffer, Harry E., Cedar Rapids  
Pfuhl, Anthony C., Dubuque  
Phillips, Albin B., Clear Lake (L.M.)  
Phillips, Allan B., Des Moines  
Phillips, Clarence P., Muscatine  
Phillips, Isaac H., Missouri Valley  
Phillips, Jesse H., Montezuma (L.M.)  
Phillips, Norman W., Clear Lake (L.M.)  
Phillips, Walter B., Montezuma  
Pickard, John C., Dubuque  
Piekenbrock, Frank J., Dubuque  
Piercy, Kenneth C., Ames  
Pierson, Lawrence E., Sioux City  
Piper, Mark M., Hopkinton  
Plankers, Arthur G., Dubuque  
Plass, Everett D., Iowa City  
Plimpton, Robert P., Denison  
Plummer, George A., Cresco  
Poepsel, Frank L., West Point  
Pollock, Roscoe, Douds-Leando  
Pope, John M., Cherokee  
Porstmann, Louis J., Davenport  
Porter, Charles E., Redfield  
Porter, Clarence M., Woodward  
Porter, Robert J., Des Moines  
Porter, Samuel D., Grinnell  
Posner, Edward R., Des Moines (L.M.)  
Powell, Burke, Albia (L.M.)  
Powell, Lester D., Des Moines  
Powell, Robert A., Farragut  
Powell, Velura E., Red Oak  
Powers, Francis E., Boone  
Powers, Henry R., Emmetsburg  
Powers, Ivan R., Waterloo  
Powers, Joseph C., Hampton  
Preece, Wade O., Waterloo  
Prentice, George L., Troy  
Prentiss, Robert J., Iowa City  
(Camp Claiborne, Louisiana)  
Presnell, J. William, Scranton  
Presnell, William H., Charlotte  
Prettyman, Oscar R., Manson  
Prewitt, Leland H., Ottumwa  
Price, Alfred S., Des Moines  
Priessman, Frank A., Keokuk  
Priestley, Joseph B., Des Moines  
Pringle, Jesse A., Bagley (L.M.)  
Proctor, Rothwell D., Cedar Rapids  
Prouty, James V., Cedar Rapids  
Ptacek, Joseph L., Webster City  
Pumphrey, Loira C., Keokuk  
Purcell, Bert E., Iowa Falls  
Putnam, Chester L., Manchester  
Quinn, Francis P., Dubuque  
Ralston, Furman P., Knoxville  
Rambo, Cyrus C., Creston  
Rambo, David T., Ottumwa  
Rambo, Eli F., Webster City  
Randall, John H., Iowa City  
Randall, William L., Hampton  
Rankin, Isom A., Iowa City  
Rankin, John R., Keokuk  
Rankin, William, Keokuk  
Ransom, Harry E., Des Moines  
Rarick, Ivan H., Sioux City  
(Little Rock, Arkansas)  
Rater, David L., Ottumwa  
Rathe, Herbert W., Waverly  
Rausch, Gerald R., Clarinda  
Ravitts, Joseph L., Montezuma  
Raw, Elmer J., Pierson  
Redmond, James J., Cedar Rapids  
(Camp Claiborne, Louisiana)  
Redmond, Thomas M., Monticello  
Reed, Andrew I., Estherville  
Reed, Guy P., Davis City (L.M.)  
Reed, Paul A., Iowa City  
Reed, Purl E., Council Bluffs  
Reed, Roe B., Clearfield  
Reeder, James E., Sioux City  
Reeder, James E., Jr., Sioux City  
Reiley, William S., Red Oak  
Reimers, Robert S., Fort Madison  
Reinicke, Edward L., Dubuque (L.M.)  
Reinsch, Frank, Ashton  
Render, Norman D., Clarinda  
Rendleman, William H., Davenport  
Reuber, Roy N., Mason City  
Reuling, Frank H., Waterloo  
Reynolds, Albert C., Mingo  
Reynolds, Earl O., Greenfield  
Rice, Floyd W., Des Moines  
Richards, Frank O., Winterset  
Richardson, Leon F., Collins  
Richmond, Arthur C., Fort Madison

Richmond, Frank R., Fort Madison  
 Richmond, Paul C., New Hampton  
 Richter, Harold J., Albia  
 Ridenour, Joseph E., Waterloo  
 Riegelman, Ralph H., Des Moines  
 (Little Rock, Arkansas)  
 Rieniets, John H., Cedar Rapids  
 Riggert, Leonard O., Clinton  
 Riggle, Frank P., Cedar Rapids  
 Riley, John, Exira (L.M.)  
 Rimel, George W., Bedford  
 Ringena, Engelke J., Brooklyn  
 Rinker, George E., Oto  
 Risk, Howard, Oelwein  
 Ristine, Leonard P., Mt. Pleasant  
 Ritter, John F., Maquoketa  
 Robb, James B., Chariton  
 Roberts, Charles R., Dysart  
 Roberts, Francis L., Spirit Lake  
 Roberts, Francis M., Knoxville  
 Roberts, Justus B., Ottumwa  
 Robertson, Andrew A., Council Bluffs  
 Robertson, Treadwell A., West Liberty  
 Robinson, Robert E., Waverly  
 Robinson, Van C., Des Moines  
 Rock, John E., Davenport  
 Rodawig, Donald F., Spirit Lake  
 Roddy, Harold J., Ames  
 Roder, Carl F., Dumont  
 Rodgers, Lewis A., Oskaloosa (L.M.)  
 Roe, Cullen B., Afton  
 Rogers, Claude B., Earlville  
 Rogers, Marion W., Leon  
 Rohlf, Edward L., Jr., Waterloo  
 Rohlf, William A., Waverly (L.M.)\*  
 Rohner, Frank J., Iowa City  
 Rohrbacher, William M., Iowa City  
 Rohwer, Roland T., Sioux City  
 Rolfs, Floyd O., Parkersburg  
 Rolfs, Fred A., Aplington  
 Romine, John H., Stanhope  
 Rominger, Clark R., Hurley, New Mexico  
 Rominger, Clark W., Waukon  
 Roost, Frederick H., Sioux City  
 Rose, Alvin A., Story City  
 Rose, Joseph E., Grundy Center  
 Rosebrook, Lee E., Ames  
 Rosendorff, Charlotte, LeClaire  
 Ross, Arthur J., Jr., Clinton  
 Rotkow, Maurice J., Des Moines  
 Rowan, Charles J., Beverly Hills, Calif.  
 Rowat, Harry L., Des Moines  
 Rowe, Frank N., Denison  
 Rowley, William G., Sioux City  
 Royal, Lester A., West Liberty  
 Royal, Malcolm A., Des Moines  
 Ruilmann, Cyril J., Iowa City  
 Ruml, Wentzle, Cedar Rapids  
 Runyon, John H., Seymour  
 Rusk, Lester D., Sioux City  
 Russ, Jesse E., Rake  
 Russell, Charles R., Des Moines\*  
 Russell, Edmund D., Fort Dodge  
 Russell, Elwood P., Burlington  
 Russell, John, Des Moines  
 Russell, Ralph E., Waterloo  
 Rust, Emery A., Webb  
 Ruth, Verl A., Des Moines  
 Ryan, George C., Maquoketa  
 Ryan, Granville N., Des Moines (L.M.)  
 Ryan, John C., Des Moines  
 Ryan, Martin J., Sioux City  
 Saar, Jesse L., Donnellson  
 Sage, Erwin C., Burlington  
 Sals, Adolph L., Iowa City  
 St. Onge, Joseph A., Sioux City  
 Salisbury, Frederick S., Knoxville  
 Sampson, Carl E., Creston  
 Sampson, Frank E., Creston (L.M.)  
 Sams, Joseph H., Clarion (L.M.)  
 Samuelson, Carl A., Sheldon  
 Sanders, George E., Des Moines  
 Sanders, Matthew G., Fort Dodge  
 Sarff, Floyd G., Logan  
 Sartor, Guido J., Mason City  
 Sartor, Pierre, Titonka  
 Sawyer, Grace M., Woodward  
 Sawyer, Prince E., Sioux City

Sayler, Harley L., Des Moines (L.M.)  
 Sayre, Ivan K., St. Charles  
 Scales, Emmet T., Des Moines  
 Scanlan, George C., De Witt  
 Scanlan, Maurice, De Witt  
 Scanlon, George H., Iowa City  
 Scannell, Raymond C., Carroll  
 Schaefer, Paul H., Burlington  
 Schaeferle, Lawrence G., Gladbrook  
 Schafer, Leander H., De Witt  
 Schanche, Arthur N., Ames  
 Scharle, Theodore, Dubuque  
 Scheele, Matthias H., Dubuque  
 Schenk, Erwin, Des Moines  
 Schermerhorn, Grace C., Clinton  
 Schiff, Joseph, Anita  
 Schilling, Nicholas, New Hampton  
 Schlaser, Verne L., Des Moines  
 Schmidt, Bernhard H., Davenport (L.M.)\*  
 Schmitz, Henry C., Des Moines  
 Schnug, George E., Dows  
 Schoon, Harold W., Sibley  
 Schroeder, Adrian J., Marshalltown  
 Schroeder, Frank N., Ryan  
 Schroeder, Leslie V., Walcott  
 Schroeder, Mergren C., Pella  
 Schrup, Joseph H., Dubuque (L.M.)  
 Schultz, Albert A., Fort Dodge  
 Schultz, Ivan T., Humboldt  
 Schultz, Nelle E. T., Humboldt  
 Schwartz, John W., Sioux City  
 Scott, Homer W., Fort Dodge  
 Scott, Philip A., Spirit Lake  
 Scott, Sophie H., Des Moines (L.M.)  
 Scott, Walter E., Adel (L.M.)  
 Seabloom, John L., Red Oak  
 Seaman, Charles L., Mt. Ayr  
 Sebern, Richard C., Fort Dodge  
 Secoy, Frank L., Sioux City  
 Sedlacek, Leo E., Cedar Rapids  
 Seibert, Cecil W., Waterloo  
 Seidler, William A., Jamaica (L.M.)  
 Seiler, Raymond A., Blainstown  
 Sellards, Joseph W., Clarinda  
 Sells, Benjamin B., Independence  
 Sells, Frank W., Osceola  
 Selman, Ralph J., Ottumwa  
 Selo, Rudolph A., Hazleton  
 Senfeld, Sidney, Belle Plaine  
 Senska, Frank R., Brandon  
 Senty, Elmer G., Davenport  
 Severson, George J., Slater  
 Shafer, Lee E., Davenport  
 Shane, Robert S., Pilot Mound (Des Moines, Iowa)  
 Shannon, Edwin R., Waterloo  
 Sharon, James P., Fort Dodge  
 Sharpe, Donald C., Dubuque (Fort Leonard Wood, Missouri)  
 Shaw, Albert E., Des Moines  
 Shaw, David F., Britt  
 Shaw, Ernest E., Indianola  
 Shaw, Mathew M., Madrid  
 Shaw, Robert E., Clarksville  
 Shellito, Amos G., Independence (L.M.)  
 Shelton, Charles D., Bloomfield  
 Sherlock, John H., Larchwood  
 Sherman, Elmer E., Keosauqua  
 Sherman, Richard C., Farley  
 Shine, Dan W., Oelwein  
 Shonka, Thomas E., Malvern  
 Shope, Charles D., Terril  
 Shorey, Joseph R., Davenport  
 Shrader, John C., Fort Dodge  
 Shulkin, Samuel H., Sioux City  
 Shumate, C. Frank, Miles  
 Sibley, Edward H., Sioux City  
 Sibley, Samuel E., Sioux City  
 Sievers, Claudius L., Denison  
 Sigworth, Fred B., Anamosa  
 Simeral, Fred E., Brooklyn  
 Simmons, Ralph R., Des Moines  
 Simon, Werner, Cherokee  
 Singer, Siegmund F., New Hampton  
 Sinn, Irvin J., Williamsburg  
 Sinning, Augustus, Iowa City  
 Sinning, John E., Melbourne  
 Skallerup, Walter M., Walker

Skultety, James A., Des Moines  
 Slavin, Charles T., Moravia  
 Smazal, Stanley F., Davenport  
 Smead, Howard H., Des Moines  
 Smead, Leslie L., Newton  
 Smiley, Ralph E., Mason City  
 Smith, Arthur F., Manning  
 Smith, Carl W., Dubuque  
 Smith, Cecil R., Onslow  
 Smith, Channing G., Granger  
 Smith, Elmer M., State Center (Fort Meade, South Dakota)  
 Smith, Eugene E., Waterloo  
 Smith, Ferdinand J. E., Milford (L.M.)  
 Smith, Frank S., Nevada (L.M.)  
 Smith, Fred M., Iowa City  
 Smith, Harold F., Iowa City  
 Smith, Harry P., Iowa City  
 Smith, Herman J., Des Moines  
 Smith, Homer A., Correctionville  
 Smith, Howard W., Woodward  
 Smith, Jason N., Iowa City  
 Smith, Lawrence D., Des Moines  
 Smith, Rex I., Waterloo  
 Smith, Robert A., Albia  
 Smith, Robert T., Granger  
 Smith, Sidney D., Waterloo  
 Smouse, William O., Des Moines (L.M.)  
 Smrha, James A., Cedar Rapids  
 Smythe, Arnold M., Des Moines  
 Snitkay, Carl J., Belle Plaine  
 Snodgrass, Ralph W., Des Moines  
 Snyder, Dean C., DeWitt  
 Snyder, Glen E., Grimes  
 Snyder, John A., Roland  
 Snyder, Raleigh R., Des Moines  
 Soe, Peder, Kimballtown  
 Sohm, Herbert A., Des Moines  
 Sokol, John M., Spencer  
 Sollenbarger, George H., Corydon  
 Solis, Delmar B., Chariton  
 Somers, Pearl E., Grinnell (L.M.)  
 Sones, Clement A., Des Moines  
 Sorensen, Alfred, Harlan  
 Sorensen, Elmer M., Red Oak  
 Sorensen, Regnar M., Des Moines  
 Sorenson, Aral C., Davenport  
 Sorenson, Kermit R., Sabula  
 Soucek, Adolph, Cherokee  
 Southwick, William W., Marshalltown  
 Spain, Robert T., Conrad  
 Sparks, Francis R., Waverly (L.M.)  
 Spaulding, Homer L., Ankeny  
 Spear, William M., Oakdale  
 Speidel, Glenn P., Providence, Rhode Island  
 Spellman, Martin T., Cedar Rapids  
 Sperow, Wendell B., Nevada  
 Sperow, William E., Carlisle  
 Spilman, Harold A., Ottumwa  
 Spilman, Smith A., Ottumwa (L.M.)  
 Spinharney, Lester J., Cherokee  
 Springer, Floyd A., Des Moines  
 Sproul, William M., Des Moines  
 Stabo, Trond N., Decorah (L.M.)  
 Stadler, Harold E., Iowa City (Fort Benjamin Harrison, Indiana)  
 Stafford, James F., Lovilia  
 Staggs, William A., Iowa City  
 Stalford, John H., Sac City (L.M.)  
 Stam, Nicholas C., Mason City  
 Standefer, Joe M., Tama  
 Stansbury, John E., Cedar Rapids  
 Stark, Callistus H., Cedar Rapids  
 Starr, Charles F., Mason City  
 Starry, Allen C., Sioux City  
 Stauch, Martin O., Whiting  
 Staudt, Alfred J., Waterloo  
 Stearns, A. Bryce, Des Moines (Fort Meade, South Dakota)  
 Steele, George H., Belmond  
 Steelsmith, Frank R., Des Moines  
 Steenrod, Emerson J., Iowa Falls  
 Steffens, Lincoln F., Dubuque  
 Steffey, Fred L., Keokuk  
 Stegman, Jacob J., Marshalltown  
 Steindler, Arthur, Iowa City



- Steinle, George H., Burlington (Camp Robinson, Arkansas)
- Stephen, Paul, Manchester
- Stephen, Raymond J., Cedar Rapids
- Stepp, James K., Manchester
- Sterling, Allen F., Norway
- Sternagel, Fred, West Des Moines
- Sternberg, Walter A., Mt. Pleasant (L.M.)
- Sternhill, Irving, Mason City (Little Rock, Arkansas)
- Sternhill, Isaac, Council Bluffs
- Stevens, Franklin A., Belmond (L.M.)
- Stevens, Harry L., Ottumwa
- Stevenson, Eber F., Waterloo (L.M.)
- Stevenson, William W., Rockwell City
- Stewart, Alexander P., Inwood
- Stewart, Robert A., Independence
- Stewart, William L., Mediapolis
- Stinson, Alice C., Estherville
- Stoakes, Charles S., Lime Springs
- Stober, Raymond W., Charles City
- Stodden, Frank J., Sioux City
- Stoecks, William A., Davenport
- Stolley, Jordan G., Merville
- Stone, James G., Bloomfield
- Stotler, Willis F., Shenandoah
- Strawn, John T., Des Moines
- Stribley, Harry A., Dubuque
- Strohbehn, Edward F., Davenport
- Strosnider, Homer O., Keokuk
- Stroy, Herbert E., Osceola
- Struble, Gilbert C., Ottumwa
- Struck, Kuno H., Davenport
- Stuart, Percy E., Nashua
- Stuckhart, Theodore, Platte, South Dakota
- Studebaker, John F., Fort Dodge
- Stutsman, Eli E., Washington
- Suchomel, Thomas F., Cedar Rapids
- Sugg, Herbert R., Clinton
- Sulek, Arthur E., Cedar Rapids (Camp Shelby, Mississippi)
- Sullivan, Lawrence F., Donahue
- Sult, William F., Gilman
- Sunderbruch, John H., Davenport
- Swab, Charles C., Cedar Rapids
- Swalum, James A., Storm Lake
- Swalum, Troy W., Spencer
- Swan, Kenneth C., Iowa City
- Swanson, John E., Sioux City
- Swanson, Leslie W., Iowa City
- Swift, Frederick J., Maquoketa
- Swinney, Roy G., Richland
- Synga, Jacob J., Pella
- Synhorst, John B., Des Moines
- Sywassink, George A., Muscatine
- Tait, John H., Des Moines
- Talbott, Eugene F., Grinnell (L.M.)
- Talley, Louis F., Marshalltown
- Tamisiea, Francis X., Missouri Valley
- Tamisiea, John L., Missouri Valley
- Tandy, Roy W., Morning Sun
- Tapper, George W., Monona
- Taylor, Charles I., Pomeroy
- Taylor, Edward D., Davenport (L.M.)
- Taylor, Ingram C., Memphis, Tennessee
- Taylor, Lawrence A., Ottumwa
- Taylor, Maude, Ottumwa
- Taylor, Robert S., Davenport
- Teufel, John C., Davenport
- Teufel, John C., Davenport
- Tharp, Hubert M., Monroe
- Thatcher, Orville D., Fort Dodge
- Thatcher, Wilbur C., Fort Dodge
- Thayer, Wilbur F., Doon
- Thein, Garfield M., Oelwein
- Theisen, Roy L., Dubuque
- Thielen, Edward W., Waterloo
- Thielen, Michael H., Grundy Center
- Thomas, Clarence I., Guthrie Center
- Thomas, Clifford W., Forest City
- Thomas, Clyde E., Keystone
- Thomas, Colin G., Monticello
- Thomas, Louis A., Red Oak
- Thomas, William H., McGregor
- Thompson, Gilbert N., Jesup
- Thompson, Harry F., Forest City (L.M.)
- Thompson, Howard E., Dubuque
- Thompson, Ira F., Donnellson
- Thompson, James R., Waterloo
- Thompson, Kenneth L., Oakland
- Thompson, Virginia D., Des Moines
- Thompson, William L., Bayard (L.M.)
- Thoms, Adolph N., Cedar Falls
- Thomsen, Thomas F., Red Oak
- Thomson, John A., Sioux City
- Thornburn, Orval L., Ames
- Thornburg, William V., Guthrie Center (L.M.)
- Thornell, Joseph B., Council Bluffs
- Thornton, Frank E., Iowa City
- Thornton, James W., Livermore, Calif.
- Thornton, John W., Lansing
- Thornton, Thomas F., Waterloo
- Thorson, John A., Dubuque
- Throckmorton, James F., Des Moines
- Throckmorton, Jeannette Dean, Des Moines (L.M.)
- Throckmorton, Robert F., Des Moines (L.M.)
- Throckmorton, Scott L., Chariton
- Throckmorton, Tom B., Des Moines
- Tice, Claude B., Mason City
- Tidball, Charles W., Independence
- Tidrick, Robert T., Iowa City
- Tinley, Mary L., Council Bluffs
- Tinley, Mathew A., Council Bluffs
- Tinley, Robert E., Council Bluffs
- Tinsman, Eugene, Orient
- Titus, Elton L., Iowa City
- Todd, V. Stanley, Eldora
- Tolliver, Hillard A., Charles City
- Tombaugh, Frank M., Burlington (L.M.)
- Tompkins, Erle D., Clarion
- Toubes, Abraham A., Des Moines
- Tracy, John S., Sioux City
- Traister, John E., Eddyville
- Trey, Bernhard L., Marshalltown
- Treynor, Jack V., Council Bluffs
- Trimbo, Joseph H., Winfield
- Tripp, Leroy R., Sioux City
- Trueblood, Clare A., Indianola
- Trunnell, Thomas L., Waterloo
- Turner, Howard F., Marshalltown
- Turner, Lee R., Renwick
- Turner, William R., Fort Dodge
- Tyler, Charles W., Polk City
- Tyrrell, Joseph W., Des Moines (L.M.)
- Unger, David, Des Moines
- Updegraff, Charles L., Boone
- Utendorfer, Robert W., Calmar
- Valiquette, Frank G., Sioux City
- Van Ausdall, Garrett M., New London (L.M.)
- Van Camp, Thomas H., Breda
- Vander Meulen, Herman C., Pella
- Vander Stoep, Harry L., Le Mars
- Vander Veer, Frank L., Janesville
- Van Duzer, William R., Casey
- Van Epps, Clarence E., Iowa City
- Van Epps, Eugene F., Clinton
- Vangness, Ingmar C., Sioux City
- Van Metre, Edward J., Tipton
- Van Metre, Paul W., Rockwell City
- Van Ness, Charles S., Peterson
- Van Patten, Ernest M., Fort Dodge
- Van Tiger, William H., Eldora
- Van Werden, Benjamin D., Keokuk
- Van Winkle, Howard L., Cedar Rapids
- Vaubel, Ellis K., Des Moines (Fort Benning, Georgia)
- Veldhouse, Richard H., Cedar Rapids
- Veltman, John F., Winterset
- Venable, George L., New Sharon
- Vermeer, Gerritt E., Sheldon
- Vesterborg, Peder H., Forest City (L.M.)
- Victorine, Edward M., Cedar Rapids
- Vineyard, Thomas L., Ottumwa
- Vinson, Harry W., Ottumwa
- Voigt, Ernest J., Burlington
- Voigt, F. O. W., Oskaloosa
- Vollmer, Karl, Davenport
- von Lackum, Herman J., Dysart (L.M.)
- von Lackum, John K., Cedar Rapids
- Vorpahl, Rudolf A., Cedar Rapids
- Voss, Otto R., Davenport
- Waddell, Jesse C., Paton
- Waggoner, Charles V., Clinton
- Wagner, Eugene C., Des Moines
- Wagner, James A., Primghar
- Wagner, William C., Traer (L.M.)
- Wahrer, Frederick L., Marshalltown
- Wailles, John W., Davis City (L.M.)
- Wainwright, Maxwell T., Mapleton
- Wakeman, Allie H., Fort Dodge
- Walk, Frederick D., South English
- Walker, Benjamin S., Corydon
- Walker, Charles C., Des Moines
- Walker, Claude M., Kellerton
- Walker, Evon, Ottumwa
- Walker, Harry L., Cedar Rapids
- Walker, Herbert P., Clarion
- Walker, John M., Dubuque
- Walker, Thomas G., Riceville
- Walker, Thomas S., Riceville (L.M.)
- Wall, David, Ames
- Wallace, Charles E., New Sharon
- Wallace, Robert M., Algona
- Wallahan, Jay H., Corning (L.M.)
- Walliker, Wilbur M., Clinton
- Walsh, Eugene L., Dayton, Ohio
- Walston, Edwin B., Des Moines
- Walter, August F., Gladbrook
- Walton, Seth G., Hampton
- Walvoord, William W., Dunlap
- Wanamaker, Ambrose E., Hamburg (L.M.)
- Wanamaker, Ambrose R., Hamburg
- Ward, Dell W., Oelwein
- Ward, Donovan F., Dubuque
- Ward, Lorraine W., Fairbank
- Ward, Thomas L., Arnolds Park
- Ware, Matt, West Branch
- Ware, Stephen C., Kalona
- Waring, Thomas L., Memphis, Tennessee
- Warner, Emory D., Iowa City
- Warner, Ervin W., Dows
- Warren, Elbert T., Stuart
- Waterbury, Charles A., Waterloo
- Watkin, Clifford R., Sioux City
- Watson, Elbert J., Diagonal (L.M.)
- Watters, George H., Des Moines
- Watters, Phil G., Des Moines
- Watts, A. Fred, Creston
- Watts, Clyde F., Marengo
- Weatherly, Howard E., Iowa City
- Weaver, Adam, Cumberland
- Weaver, Kenneth H., Union
- Webb, Daniel R., Jr., Oakdale
- Webb, Harold H., Ottumwa
- Webb, Jonathan W., Bonaparte
- Webb, Waterman T., Fairfield
- Weber, Leslie E., Wapello
- Weber, William W., Pomeroy
- Wedel, James R., Keokuk
- Weems, Nev E., Paulina
- Wehman, Edward J., Burlington
- Weih, Elmer P., Clinton
- Weinberg, Harry B., Davenport (Fort Benning, Georgia)
- Weingart, Julius S., Des Moines
- Weir, Edward C., Council Bluffs
- Weir, Matt B., Griswold
- Weis, Howard A., Davenport
- Wells, Fred L., Des Moines (L.M.)
- Wells, Rodney C., Marshalltown
- Wellstead, Leroy, Ottumwa
- Wendell, Margaret R., Ames
- Wentworth, Laydon S., Marble Rock
- Wentzien, Albert J., Tama
- Werndorff, Karl R., Council Bluffs
- Werner, Carl A. A., Albert City
- Werner, Harold T., Fort Madison
- Werts, Charles M., Des Moines
- West, George H., Armstrong
- West, Harry D., Des Moines
- West, Walter E., Centerville
- West, William W., Clarinda
- Westenberger, Joseph C., St. Ansgar
- Westly, Gabriel S., Manly
- Westly, Soren S., Manly
- Weston, Burton R., Mason City
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## HEAD INFECTIONS IN THE PRACTICE OF MEDICINE\*

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Chicago, Illinois

The head infections encountered most often in general medical practice are the acute and chronic infections of the nose and its accessory sinuses. In just the last few years important changes have occurred in our point of view toward nasal and sinus disease and especially toward chronic sinus infection. As a result of this new point of view our therapeutic approach toward chronic sinusitis is being revolutionized and we are seeing results never before attained in this condition.

The normal nose and sinus have well developed and efficient mechanisms of defense against infection. If these natural defenses are preserved the nose and sinus will recover spontaneously from the great majority of acute infections. The nasal cavity is lined by a highly specialized mucosa whose primary function is that of air-conditioning. The normal nasal cavity consists of a series of narrow chinks around the turbinates through which the inspired air must pass on its way to the lungs. The mucous membrane lining of the nose is very vascular to warm the inspired air. The mucous membrane is covered by a film of wet, sticky mucus to humidify the air and to remove most of the dust particles which adhere to this sticky mucous coat. This mucous coat is kept in constant motion by the cilia which project from the epithelium of the nasal mucosa. Fresh mucus is secreted by goblet cells in the epithelium and by mucous glands beneath the epithelium found in great abundance over the anterior tips of the turbinates. The constantly renewed mucous coat flows toward the back of the nose to the throat and then down into the stomach. Normally this film of mucus is so thin and clear that we are not aware of it. In disease the amount of mucus may

be increased and it may become thick and tenacious and mixed with pus cells.

The sinuses are embryologically and anatomically nothing but outpouchings from the nasal cavity into the bones of the face for the purpose of decreasing the weight of the skull. These outpouchings are lined by the same mucosa as the nose except that the sinus mucosa is thinner, less vascular and with fewer mucous glands since there is little circulation of air in the sinuses and less need of an air-conditioning function.

The first line of defense against infection in the nose is the mucous coat which mechanically entraps air-borne organisms and carries them to the stomach where they are digested and destroyed. There is also the protective reflex of sneezing which is designed to expel an irritant, accompanied by a profuse watery secretion designed to wash out the irritant. If an infection becomes established the mucous coat becomes greatly increased in amount and there is an increased blood supply to the mucous membrane to bring leukocytes which migrate from the capillaries into the tissues where they phagocytize the invading organisms. The leukocytes then migrate through the epithelium into the nasal cavity where they become mixed with the mucus to form mucopus.

The treatment of acute nasal and sinus infections can be summed up in one word—rest; rest of the body as a whole and rest of the nose and sinuses in particular. Putting the nose and its sinuses to rest means removing, as far as possible, the burden of air-conditioning by supplying the nose with warm moist air as free as possible from irritants such as smoke and dust. The patient with acute sinusitis will recover more quickly if put to bed in a warm room humidified by means of a steam kettle, and with the windows kept closed if it is cold outside. Smoking should be kept to a minimum. Moist heat applied to the face in the form of a bath towel wrung out of hot water is very helpful when the nasal congestion becomes uncomfortable and is generally preferable to nasal

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drops. Adrenalin, ephedrine, neosynephrin and mild silver protein in the form of argyrol and neosilvol all shrink the nasal mucosa temporarily but frequently act as an irritant. If used at all, I prefer one-half per cent ephedrine or one-sixteenth per cent neosynephrin in normal saline, a medicine dropper full instilled into the nose with the head hyperextended, not oftener than two or three times a day. A benzedrine inhaler is probably the least irritating of any method for shrinking the nasal mucosa but it, too, should be used sparingly. An infra-red lamp is a convenient method of applying heat to the face and of keeping the moist towel hot. Diathermy does not seem to have any advantage over external heat.

The average case of acute rhinitis clears up in a week. The sinuses are probably involved more or less in every case of acute rhinitis but their cilia are efficient in keeping them swept clean of mucus and pus, and as long as a sinus does not contain pus we do not call the condition sinusitis. When a case of acute rhinitis does not clear up within a week it usually means that one or more of the sinuses has been unable to keep itself drained and is filled with mucopus. When the maxillary sinus is the one which is filled with mucopus, irrigation through the natural ostium with warm normal saline, repeated a few times, will hasten healing. When the persistent infection is in the ethmoid, frontal or sphenoid sinus, irrigation is more difficult to do without trauma and therefore a few intranasal argyrol or neosilvol packs are preferable to shrink the tissues and promote drainage. Sulfanilamide or sulfathiazole are very much worthwhile in cases of acute sinusitis where the severity of the symptoms warrants the use of these powerful and dangerous drugs. It is not good judgment to use them in mild cases of sinusitis where the toxic effects of the drug may be worse than the sinus infection. It should be remembered that acute sinusitis is essentially a self-limited disease which usually will clear itself up spontaneously with rest and if left alone. In the early stages intranasal manipulation is not only unnecessary but it is even dangerous and may lead to a spreading and often fatal osteomyelitis of the skull.

Chronic sinusitis, on the other hand, shows little or no tendency to spontaneous recovery. Chronic sinusitis is one of the most prevalent of all chronic diseases. Its response to treatment has frequently been unsatisfactory and disappointing. For many years rhinologists treated chronic sinusitis largely from the mechanical point of view. An infected sinus was regarded as an abscess to be drained, and if drainage did not produce a cure an attempt was made to remove the infected tissues surgically.

When surgical measures failed to produce a lasting cure, more radical operations were devised in a desperate effort to extirpate every trace of infection. Sufficient time has elapsed to show us that even the most radical operations have sometimes failed to prevent recurrence of sinus infection after the sinus mucosa had had time to regenerate and to become reinfected. Surgery alone has failed in many cases to solve the problem of chronic sinusitis. As a result of this failure, we have been forced to study the etiologic factors behind chronic sinusitis. It is this study of etiologic factors which is revolutionizing our concepts of chronic sinusitis and radically changing our therapeutic approach.

Cases of chronic sinusitis can be rather sharply and accurately differentiated into two varieties. The first variety is the pure infection where the chronicity is due simply to the type of infecting organism and not to any systemic or other factor. The organisms in these pure infections appear to be anaerobic in type, and in the anaerobic conditions found in a sinus filled with pus, the infection continues indefinitely. However, the moment free ventilation of the sinus is reestablished, the infection clears up. Many of these pure infections originate in the maxillary sinus as the result of an abscessed upper molar tooth that breaks into the sinus. The ethmoid and frontal sinus on the same side may become secondarily infected since their ostia are close to the ostium of the maxillary sinus. The infection is often confined to one sinus and is usually confined to one side of the nose.

These pure infections may also follow severe upper respiratory infections such as scarlet fever. When we irrigate one of these pure infection sinuses we find a liquid pus which may have a very foul odor. However, although the pus is foul, these patients are likely to have comparatively mild symptoms or even no symptoms at all. For example, the only symptom may be a chronic post-nasal drip for many years, perhaps with an occasional foul odor when the patient leans forward. In other cases the sinusitis is only detected in a routine search for a focus of infection in a patient with arthritis.

Since these cases of pure infection sinusitis are not due to any factor except the type of infecting organism, the treatment of these cases is directed solely against the infection. Mechanical irrigation should first be given a fair trial since it will clear up a few of these cases, even when a sinus has contained pus for months or years. If a pure culture of hemolytic streptococcus is obtained, for example, in a sinusitis that followed scarlet fever, sulfanilamide may be effective. The majority of



these pure infection maxillary sinusitis cases, however, are a mixed infection that will not clear up until ventilation is established by the creation of a large intranasal window to supplement the tiny natural ostium. A maxillary sinus that has contained the foulest smelling pus for many years will clear up almost miraculously the moment a large window is made into the nose; the next day the sinus will be free from suppuration. Frequently the secondary frontal and ethmoid sinusitis will clear up by itself or with simple irrigations once the primary maxillary sinus infection has been cleared. Once cleared up, the pure infection type of sinusitis shows little or no tendency to recurrence; the cure is permanent.

The second variety of chronic sinusitis is considerably more common than the pure infection, and it is far more resistant to treatment. In these cases the chronicity of the infection is due to an underlying allergy. The credit for directing the attention of the rhinologist to the underlying allergy in these chronic nasal and sinus infections belongs to Dr. French Hansel of St. Louis. Dissatisfied with the help that he obtained from the allergist in nasal problems, Hansel began to make his own allergic studies in chronic nasal and sinus disease, with far better results. The reason was simple. The average patient cannot afford and will not make repeated visits to two doctors for one disease. In chronic nasal or sinus infection with an underlying allergy it is necessary to treat both the infection and the allergy simultaneously to obtain the best results. Moreover, the rhinologist has the considerable advantage of directly observing the results of his therapy on the nose and sinuses.

The diagnosis of nasal allergy depends, in the last analysis, upon the therapeutic test. If removal of a specific substance relieves the symptoms, and if exposure to the substance then produces the symptoms, we know that the patient is allergic to the substance, that is, he reacts abnormally to it. This, of course, applies only to substances which normally produce no symptoms on exposure to them. Tear gas, for instance, produces violent nasal symptoms but this is the normal reaction to tear gas and is, therefore, not an allergic reaction.

Nasal allergy is produced by two kinds of substances: by inhalants such as pollens, dust and animal danders, or by ingestants such as food and drugs. For the diagnosis of allergy, the skin tests are only an aid in identifying the substance. A positive skin test is not at all necessary for diagnosis. This fact I wish to emphasize, for the allergist, in our experience, has too often depended on positive skin tests rather than the therapeutic

test to diagnose allergy. A patient may show a positive skin test to a substance and yet have no allergic symptoms on exposure to it. Even more important, the patient will often be definitely allergic to one or more substances as proved by the therapeutic test and yet all skin tests will be negative. Therefore, the skin tests are to be regarded as only one of the aids to diagnosis.

Certain characteristics of allergic sinusitis help in differentiating it from the pure infection type of chronic sinusitis. Because the underlying allergy is systemic the sinus involvement is usually multiple and bilateral and it may include all of the sinuses on both sides. In addition, the nasal mucosa is involved along with the sinus mucosa. Other systemic manifestations of the underlying allergy are likely to be attributed by the patient to the sinusitis, such as fatigue, headaches and gastro-intestinal symptoms. These are the patients who submit themselves to repeated sinus operations because of continued headache and who have given the treatment for chronic sinusitis a bad reputation because they have not been relieved.

The essential difference between the pure infection and the allergic sinusitis is seen in the histologic changes in the mucous membrane. In the pure infection the mucous membrane of the sinus is inflamed and slightly to moderately thickened with a dense infiltration with round cells, a few leukocytes and rare eosinophiles. The columnar ciliated epithelium is intact and essentially normal. In allergic sinusitis the mucosa is edematous and so tremendously thickened that it is thrown into folds which tend to protrude through the ostium of the sinus into the nose in the form of polyps. Eosinophiles are found in the mucous membrane in great numbers. The epithelium is filled with mucous-secreting goblet cells and is often desquamating.

Clinically the allergic variety of chronic sinusitis can be identified by the simultaneous involvement of the nasal mucosa with edema and hypertrophy and excessive secretion of tenacious mucus and by the finding of eosinophiles in the stained nasal smear. If the proportion of eosinophiles in the nasal secretion is increased, we suspect an allergic factor but a nasal allergy may occasionally be present without increased eosinophiles in repeated nasal smears.

Nasal secretions are best collected by blowing the nose on a piece of waxed paper. Sinus washings should also be examined. A little of the pus is placed on a glass slide and gently spread out with a stick or forceps rather than smeared with a second slide, since mashing the cells interferes with their identification. The slide is dried in the air or gently over a flame, then stained for one

minute with eosin solution, 1:200. Distilled water is added to cover the slide completely as in the Wright technic. It is allowed to stand for one minute, then drained off and flooded with distilled water until all free stain is removed, after which it is flooded with 95 per cent ethyl alcohol and drained off. It should immediately be stained with methylene blue solution 1:200 for ten seconds. Distilled water is added to cover the slide and it is left standing for thirty seconds. Excess stain may be removed with distilled water and finally with ethyl alcohol as above. If the neutrophils do not stain well, one should restain with methylene blue as above. If the neutrophils are too intensely blue, excess stain may be removed by flooding the slide with a weak acid solution: one drop of one per cent hydrochloric acid to one ounce of distilled water. This solution should be left on for only a moment, then quickly poured off. The slide should be flooded with pure distilled water and finally with ethyl alcohol.

An important step in the diagnosis of a nasal allergy is the allergic history. In my experience the history may be more valuable than the skin tests in the diagnosis of nasal allergy. Nasal symptoms that begin in this region in August and end with the first frost are probably due to allergy to ragweed pollen, while symptoms that begin in June and last until frost are most often due to grass pollen. On the other hand, nasal symptoms that begin in the fall and last through the winter and spring, but completely clear up in the summer months are probably due to an allergy to house dust since the dry steam heat and closed windows greatly increase the amount of house dust in the air. Similarly, if these chronic nasal symptoms during the winter are immediately relieved by a trip to Florida only to recur on coming back north, house dust allergy should be suspected. Nasal symptoms that continue without abatement the year around suggest a food allergy.

Some specific cases will illustrate the methods used and the results obtained in these patients with chronic sinusitis.

#### CASE REPORTS

##### *Allergy to Dust*

C. E., age 12. Chronic productive cough and chronic nasal blocking and mucopurulent discharge since age of four with three attacks of pneumonia. Treated for four years by window operation on maxillary sinus, nasal packs, displacement suction of the ethmoid and irrigation of the maxillary sinus but nearly always pus was obtained from the antrum and ethmoid, and the nasal mucosa was boggy and swollen. Purulent

bronchitis treated by repeated bronchoscopic aspirations. Allergy first suspected when several months in a convalescent camp resulted in complete disappearance of all symptoms but a recurrence within three weeks after returning home. Intradermal test with house dust negative. Because of history, given injections of house dust extract with prompt and lasting relief on a maintenance injection once a month for two years.

A. D., age 36. Sinus trouble for ten years with blocking, sneezing, postnasal discharge and tendency for head colds to last for weeks. Wheezing at times. Notices that dust makes her worse. Intradermal test to dust, three plus. Sinus x-rays showed markedly thickened mucosa; small amount of mucus washed out. Given autogenous dust injections and eliminated wheat, rice, chocolate, pea, lamb and pork. Within a few weeks symptoms better than for years and within a few months complete relief from all symptoms. To continue maintenance dose of dust extract for one year.

M. A. R., age 53. Sinus trouble for many years with operation on frontal sinus thirty-three years ago. Postnasal discharge, nasal blocking and frontal headaches. Ephedrine spray gives partial relief. Treated by displacement suction of ethmoid with temporary improvement for four years. Then noted that on a western trip symptoms entirely disappeared for three weeks but recurred a few weeks after return home. Intradermal test to dust negative but noted that exposure to dust increased his symptoms. Treated with dust extract injections with complete relief: "felt as well as out west."

D. H., age 23. Asthma since age of twelve with nasal blocking, sneezing and excessive mucoid discharge. Treated by two well known allergists without relief. Intradermal test to autogenous house dust, four plus. Given 1:100,000 dilution beginning with 0.05 of a cubic centimeter. Within three weeks asthma and nasal symptoms better than for many years and two months later no asthma as long as she remembers to take dust shots.

Dr. G., age 50. Sinus trouble since a child with turbinectomy, ethmoidectomy, removal of polyps and repeated irrigations of maxillary sinus. Better in summer, worse in winter. Intradermal dust test, two plus. After three injections 0.05 of a cubic centimeter, 0.1 of a cubic centimeter and 0.2 of a cubic centimeter of a 1:1000 solution, complete relief from all symptoms for three weeks, then recurrence. Advised to continue shots; complete relief. Nasal polyps which nearly filled nasal passages completely disappeared.



*Allergy to Food*

Dr. M., age 59. Bilateral purulent nasal discharge and blocking with headache for three months following influenza. Also severe, cramp-like abdominal pains. Intradermals on common foods and dust negative but recalls that never liked milk and that cream sometimes caused diarrhea. Omitted milk, cream and cheese and within twenty-four hours all symptoms had completely cleared.

R. M. (daughter of Dr. M.), age 12. Stuffiness of nose with excessive thick mucoid discharge as long as she remembers. For eight years periodic headaches with vomiting. For six months profuse purulent nasal discharge. Intradermals to common foods and dust negative except for milk, which was two plus. Milk, cream and cheese omitted; complete relief within one week. No recurrence.

J. D. M., age 37. Sinus trouble for fifteen years with nasal blocking and purulent nasal and postnasal discharge and headache. Pus coming from all sinuses with polyps. Septum straightened, ethmoids opened, polyps removed followed by irrigations of antra and displacement suction of ethmoids one to two times a week for one and a half years. Intradermals: chocolate, one plus. Omitted chocolate with complete freedom from all symptoms within three days. Six months later ate large piece of chocolate. Within twenty-four hours had severe sore throat with temperature of 104 degrees and acute symptoms of otitis media. No nasal symptoms.

B. McH., age 24. Constant mild sore throat, nasal blocking and fatigue. A year later acute suppurative maxillary sinusitis lasting six weeks. Two years later complained of pains around eye and cheeks, blocked nose, purulent nasal and postnasal discharge. Had been present off and on for eight years. Sinus irrigated at intervals for several months. Two years later: increased blocking and purulent discharge. Intradermals: wheat, one plus, chocolate, coffee  $\pm$ . Omitted these with complete relief until one evening ate chocolate and coffee: recurrence for twenty-four hours. Had noted that "starches" disagreed with nose.

Mrs. G., age 32. Always had sneezing, blocking and watery discharge lasting until noon each day. Referred to allergist; no results. Ten years later seen because of postnasal mucopurulent discharge, pain above eye and in cheek; had had two operations in Des Moines: well done septum and window. Thickened mucosa and pus in antra and ethmoids. Irrigated with improvement but frequent recurrences. Seen at home two years later because of severe flare-up in sinus with

sneezing, blocking and watery discharge. History of excessive gas after milk, and colitis for twenty years resistant to all treatments in all parts of the country. Omitted milk: prompt improvement in all symptoms. Intradermal to milk negative. Is able to take many more fruits and vegetables and sinuses have caused much less trouble; occasional flare-up probably due to house dust sensitivity, three plus.

Mrs. C., age 36. Nasal stuffiness and thick discharge since childhood. Sinus trouble for eight years with headache, purulent discharge, sneezing and blocking. Worse in winter. Relieved by trip to Arizona. Dust  $+\pm$ , wheat two plus, chocolate one plus, onion  $+\pm$ , tea three plus. Complete relief by omitting foods and dust injections, more complete than by trip to Arizona. Nose freer than as long as she can remember.

A series of 102 consecutive patients with chronic nasal or sinus disease were reviewed. In 51 cases the symptoms and findings were predominantly nasal, and sinus involvement was of secondary importance, while in 51 cases the chronic symptoms were mainly referable to the sinuses. Of the 51 cases of chronic rhinitis, 43 patients responded to allergic study and treatment and in only eight was no allergic factor proved. Of the 51 cases of chronic sinusitis, a definite allergic factor was proved in 36, ten were a pure infection without allergy while in five an allergic factor was suspected but not proved. It should be pointed out, however, that even where there is an allergic factor in chronic rhinitis or sinusitis, treatment of the infection alone will in many cases give satisfactory results. However, if the allergic factor is treated at the same time the results will be obtained more quickly and the frequent recurrences which are so common in chronic sinus infection will be largely eliminated. In our new emphasis on allergy we must not lose sight of the fact that the coexisting infection must be treated in many of these cases to obtain results.

## CONCLUSIONS

Chronic sinusitis can be divided into the pure infectious type and the allergic rhinitis with sinusitis. Chronic nasal and sinus disease has an allergic basis in the majority of cases.

Treatment of the infection alone by irrigations and operations may result in improvement but will often fail to give a permanent cure. Treatment of both the allergy and the infection will give the best results.

## VERTIGO

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The purpose of this paper is to discuss the etiology, differential diagnosis and treatment for various types of vertigo.

## ANATOMY

The anatomy involved includes a semicircular canal, vestibular nerve and central connections. Three semicircular canals located in the petrous portion of the temporal bone analyze the movements of the head. The bipolar cells of the vestibular ganglion send distal fibers to the semicircular canals and medial ones to the vestibular nuclei in the floor of the fourth ventricle. From here there are connections upward via the medial longitudinal bundle to the nuclei of the third, fourth and sixth cranial nerves on both sides controlling reflex ocular movements. The downward extension of the medial longitudinal bundle has connections with the spinal accessory root and upper cervical spinal nerves controlling reflex movements of the head and neck. Some of the fibers of the vestibular nerve transverse the vestibular nuclei to pass up to the cerebellum. Skeletal musculature is reflexly controlled by the vestibulo-spinal pathways originating in the vestibular nuclei and fibers from the cerebellum relaying in the reticulum of the pons and medulla, which are called the reticulo-spinal pathways. There is some evidence to show that there are connections between the vestibular nuclei and the temporal lobe of the opposite cerebral hemisphere.

## CLASSIFICATION FOR VERTIGO

- A. Labyrinthine
  1. Toxic labyrinthitis
  2. Serous and suppurative labyrinthitis
  3. Otosclerosis
  4. Trauma
  5. Disturbed intralabyrinthine tension
    - (a) Fluid imbalance
    - (b) Referred tension
- B. Neural
  1. Pathology of the eighth nerve
    - (a) Cerebellopontine angle tumor
    - (b) Syphilis
    - (c) Herpes zoster oticus
    - (d) Vascular anomalies causing compression
  2. Pathology involving pathways and higher centers
    - (a) Expanding intracranial lesions
    - (b) Nervous diseases

(c) Thrombosis of the posterior inferior cerebellar artery

## 3. Functional Causes

- (a) Ocular
- (b) Neurasthenia
- (c) Neurocirculatory asthenia

## C. Cardiovascular

## 1. Functional

- (a) Vasovagal syncope
- (b) Carotid sinus and Stokes-Adams syndrome
- (c) Arrhythmias
- (d) Vasomotor instability
- (e) Hypertension

## 2. Organic

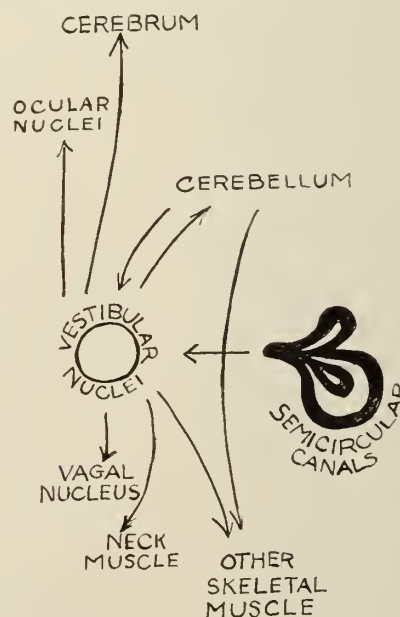
- (a) Arteriosclerosis
- (b) Syphilis, coronary disease, etc.

## 3. Blood Dyscrasias

## D. Ménière's Syndrome

## EXAMINATION

Detailed tests of the labyrinth furnish information concerning the presence of lesions in the labyrinth, vestibular nerve and the vestibular pathways and centers. Normally the two semicircular canal systems are in unison; when one is hyperactive or hypoactive, the disturbance causes vertigo, nystagmus and pointing errors. Usually the



## THE VESTIBULAR SYSTEM

Fig. 1. Schematic drawing showing nervous mechanism involved in structure and function of vestibular apparatus.



rapid oscillation of the nystagmus is toward the hyperactive side; thus, it is in the direction of an irritating lesion but directly away from a destructive lesion. Following a totally destructive lesion, the healthy labyrinth will usually accommodate to maintain equilibrium within two weeks. A slowly developing lesion causes a mild but protracted vertiginous disturbance and vice versa. The caloric tests are of value in determining the nature and site of lesions in the vestibular system.

TABLE 1. MINIMAL CALORIC TEST

Injection of ten cubic centimeters of water at 55 degrees against the upper posterior portion of the drum membrane with the patient sitting upright.

NORMAL	HYPERACTIVE
Nystagmus appears in 15 to 25 seconds. Disappears in 60 to 100 seconds.	Nystagmus appears within 15 seconds and lasts longer than 100 seconds.

TABLE II. MAXIMUM CALORIC TEST

This is devised for the study of past pointing, postural deviation, nystagmus and vertigo. The ear is irrigated with 100 cubic centimeters of water at 50 degrees while the patient sits upright, then the head is tilted back at an angle of 60 degrees. As the nystagmus appears the head is tilted forward to an angle of 30 degrees and the action of the horizontal canals is observed. When the nystagmus and past pointing has been observed, the head is again tilted back to an angle of 60 degrees and the action of the vertical canals is observed.

NORMAL	ABNORMAL
Quick nystagmus to the opposite side. Past pointing is about eight inches toward the same side with each hand and the patient will fall toward the opposite side.	Any variation from this. Interpretations are discussed below.

A detailed neurologic examination is then indicated. A careful history of the onset of symptoms and questions as to the progress of the patient's complaints should be recorded. Then a thorough survey of the patient's neurologic status is established; particularly is the question of the corneal reflex of value in cases of vertigo because it is often easy to discern a lesion of the cerebello-pontine angle with an absence of this reflex on the homolateral side. In the absence of choked discs or roentgen evidence of increased intracranial pressure, spinal puncture may be of value. The color of the fluid, the pressure when the patient is in the horizontal position and estimation of the cell count, total protein, colloidal gold and Wassermann test will lead to an evaluation of the laboratory and clinical tests.

#### DIFFERENTIAL DIAGNOSIS

Perilabyrinthitis is a probable diagnosis when there is a spontaneous vertigo in the presence of middle ear infection with normal caloric tests and preserved hearing. If there is a spontaneous horizontal rotary nystagmus with either sudden loss of hearing or loss of caloric response, there is a serous labyrinthitis; but when there is a loss of both hearing and caloric response in the presence of a middle ear infection, diffuse suppurative labyrinthitis is present. A lesion of the eighth

cranial nerve creates a decreased caloric response, spontaneous or induced nystagmus and marked tinnitus. In the event of a brain stem lesion there are associated cranial nerve disturbances and when the lesion is in the pons, superior or middle peduncle or cerebellum there is an absence of induced past pointing and vertigo, but the nystagmus prevails. In a lesion involving the medial longitudinal bundle nystagmus is eliminated; vertigo and past pointing persist.

#### A. LABYRINTHINE

##### 1. Toxic Labyrinthitis

This vertigo is the result of either bacterial or drug toxic manifestations. Quinine, alcohol, arsenic or tobacco are common drug offenders. Sinus disease may also be a factor and focal infections such as pyorrhea, cholecystitis, prostatitis, cervicitis or tonsillitis may play a rôle in the production of this condition. One of the most common conditions is a chronic constipation and this is characterized by a mild, intermittent type of vertigo without nystagmus.

Case 1. A female, single, twenty years of age, complained of vertigo and difficulty in walking for three weeks. There was a history of constipation, severe vertigo on change of position, falling to the right and, when walking in the dark, she had a tendency to deviate to the right. Examination revealed horizontal nystagmus and negative caloric tests. Spinal fluid tests including Wassermann and other laboratory tests were negative. The patient was placed upon an anticonstipation regime and phenobarbital with complete recovery.

##### 2. Serous and Suppurative Labyrinthitis

Acute serous or suppurative labyrinthitis usually follows infection of the middle ear. Before a rupture of the drum, there is increased intralabyrinthine tension resulting in vertigo and when drainage of the middle ear is established vertigo accompanied by vomiting, nystagmus and pointing errors, indicates that the labyrinth has been involved. These symptoms are sometimes mistaken for gastric upsets. The nystagmus is toward an irritated labyrinth but away from a destroyed one so that a reversal in the direction of a nystagmus suggests extension of the infection. Successful prophylaxis against labyrinthitis depends upon prompt treatment of otitis media, timely incision of the drum membrane, symptomatic treatment and the use of sulfanilamide, sulfapyridine or sulfathiazole. While there is still some hearing in the affected ear, a serous labyrinthitis must be considered and only experience and good surgical judgment can determine when mastoidectomy is to be performed. After the hearing is lost and

caloric response is absent it is obvious that a suppurative labyrinthitis has occurred and labyrinthectomy is advisable.<sup>17</sup>

### 3. Otosclerosis

Otosclerosis is a process of sclerosis of previously destroyed bony labyrinth. This is characterized by severe tinnitus, progressive loss of hearing and sudden attacks of vertigo which are accompanied by vomiting and nystagmus. Treatment is mainly symptomatic and lip reading and encouragement are distinctly of value.<sup>4</sup>

### 4. Trauma.

Labyrinthine injury may result from an injury to the head and also from trauma to the other parts of the body, probably transmitted to the perilymphatic spaces by a percussion wave in the spinal canal.<sup>8</sup> The pathology may be of a hemorrhagic or explosive type into the labyrinth capsule or the injury may be to the end organs alone. Transient attacks of vertigo may occur for several weeks to months following a head injury.

Case 2. A male, forty-six years of age, suffered a basal skull fracture with bleeding from the right ear on December 16, 1939. Two months later he complained of severe tinnitus, vertigo and headache upon reclining. Examination was negative, with the exception of reduced hearing in the right ear suggestive of contusive injury rather than actual organic disease. Relief was obtained by the administration of histamine.

This distress may persist for several weeks and months and it is often difficult to eliminate the malingerer. A carefully taken history and survey of the clinical findings are of value, plus the use of the audiometer and the caloric test. Treatment is that of the initial injury, sedation, reassurance and injections of histamine.

### 5. Disturbed Intralabyrinthine Tension

(a) Mygind and Dederding<sup>11</sup> have suggested that an intracellular edema of the labyrinth as a result of a disturbance of water metabolism, produces paroxysmal vertigo accompanied by nausea, vomiting and occasionally diarrhea. This would also explain the cause of the often associated headaches, rheumatic symptoms and cramps. Furstenberg<sup>7</sup> is of the opinion that edema is due to an affinity of the cells for sodium with the resultant electrolytic imbalance and suggests that a treatment consisting of a low salt diet, normal protein and unlimited fluid intake with the administration of ammonium chloride is of value. However, following the work of Sheldon and Horton<sup>14</sup> and his associates, the administration of histamine, plus the low sodium diet has proved to be more advantageous in this type of case.

Case 3. A male, thirty-eight years of age, complained of vertigo and tinnitus of three months' duration. On January 12, 1940, neurologic examination was negative and caloric tests revealed hyperactive response to the left labyrinth. The patient was placed on the Furstenberg regime and the administration of one cubic centimeter of histamine twice weekly for a period of two weeks. There was complete relief from symptoms with no evidence of recurrence.

(b) Referred Tension. Scott<sup>12</sup> and Atkinson<sup>3</sup> feel that paroxysmal vertigo may be the result of obstruction of the eustachian tube increasing pressure in the middle ear. Such also is the result of a plug of cerumen, cholesteoma or middle ear disease. Increased intracranial pressure may produce vertigo by placing tension on the inner wall of the labyrinth preventing an escape of labyrinthine fluid, resulting in increased intralabyrinthine pressure and vertiginous attacks. Persistent eustachian catheterization can be attempted in this type of case and removal of an accumulation of cerumen may be of value. Should an expanding lesion within the intracranium be suspected, a thorough neurologic examination is indicated.

## B. NEURAL

### 1. Pathology of the Eighth Cranial Nerve

(a) Cerebellopontine Angle Tumor. Approximately eight per cent of intracranial tumors involve the cerebellopontine angle and the majority are limited to the acoustic nerve. The tumor encroaches on the cranial nerves from the fifth to the eleventh inclusive and also pressure exerts its influence upon the cerebellum. The first symptoms are those referable to the cochlear branch of the eighth cranial nerve and consist of deafness and tinnitus. When the vestibular branch is involved there is vertigo, nystagmus with a quick component away from the lesion and vomiting. The primary objective sign after deafness is an absence of the corneal reflex on one side followed by weakness of the face, loss of gag reflex, lack of movement of half of the palate as well as an ataxia from some disturbance of the cerebellum. Vertigo is the complaint in about six per cent of these cases. The reason it is not more common is the result of more distressing symptoms monopolizing the patient's attention. In this instance there is a loss of caloric response on the affected side.

Case 4. A female, thirty years of age, complained of trigeminal neuralgia involving the right upper lip, nose and forehead for five months. Alcohol injection on January 20, 1937, afforded relief from pain until September 1, 1937, at which



time, this recurred. Injection was repeated and the patient obtained relief from pain but suffered an attack of Ménière's syndrome in November, 1937. On September 8, 1938, there was a recurrence of facial pain in the presence of anesthesia in the first and second branches of the right trigeminal nerve. At this time there was a slight diminution of the right corneal reflex and vertigo. An acoustic neuroma was removed on September 12, 1938, and there has been a complete recovery.

(b) Syphilis. Syphilis may produce acute vertigo accompanied by vomiting, nystagmus and errors in pointing. The disease usually destroys both the vestibular and cochlear divisions of the eighth nerve. The attacks are sudden and severe in the secondary stages but more mild and protracted in the tertiary phase. In congenital syphilis, however, the cochlear division alone is often destroyed. There is usually an absent caloric but normal rotation response and a positive Wassermann reaction. Antiluetic therapy should be instituted but it is quite obvious that function will not always be restored.

(c) Herpes Zoster Oticus. This condition is an acute, painful, inflammatory disturbance of the ear characterized by blisters along the course of the sensory nerves. The infection involves the cranial ganglia and is often accompanied by facial paralysis, tinnitus and deafness, vertigo, vomiting and nystagmus. Treatment is variable; however, the use of a bland ointment and the administration of either pituitary extract or diphtheria antitoxin has proved of most value.

(d) Vascular Anomalies Producing Compression. Dandy<sup>5</sup> is of the opinion that a fraction of the cases of paroxysmal vertigo are due to strangulation or compression of the vestibular nerve by one of five large arterial loops from the anterior inferior cerebellar artery. Approximately ten per cent of these cases revealed arterial contacts with the nerve. The fact that the vessels become rigid with age may explain the reason for the sudden onset of these symptoms. Operative approach upon these persistent cases reveals the compression of the arterial loop and often these distressing symptoms may be relieved by partial division of the eighth cranial nerve.

## 2. Pathology Involving Pathways and Higher Centers

(a) Expanding Intracranial Lesions. The rate of expansion of an intracranial lesion is directly proportional to the intensity of the vestibular disturbance which follows. The vertigo may be produced by pressure upon a labyrinth as a result of increased intracranial pressure or involvement of the vestibular nuclei and pathways. The common

expanding lesions are neoplasms, gummata and subdural hematomas. Tumors of the cerebellum produce increased intracranial tension but usually involve the vestibular fibers producing cerebellar convulsions and loss of consciousness. Spiegel and Alexander<sup>16</sup> state that a history of vertigo occurs in thirty per cent of brain tumors and their series reveals that seventy per cent of the patients with temporal lobe tumors complained of vertigo. This high incidence lends support to the theory that the higher cortical centers of the labyrinth are in the temporal lobe. Vertigo is frequently a presenting complaint of patients with subdural hematomas.

Case 5. A female, seven years of age, complained of blindness, vertigo and falling to the right for two months. There was a history of a head injury three years previously. On October 24, 1930, examination revealed choked discs, blindness, ataxia and falling to the right. A ventriculogram on October 27 showed a posterior fossa defect and a subdural hematoma was removed with complete recovery.

The treatment in these cases is symptomatic. In a review of 51 cases of subdural hematoma, one of us<sup>1</sup> found that vertigo was a subjective symptom in twenty per cent of the cases.

(b) Nervous Diseases. Multiple sclerosis occasionally attacks the vestibular nerve producing vertigo with loss of hearing. Vertigo is often an aura in epilepsy, particularly petit mal. This symptom will be found in encephalitis lethargica, migraine, meningitis, Friedreich's ataxia, paresis and meningovascular syphilis.

Case 6. A male, twenty-four years of age, complained of weakness of the legs and severe vertigo of two weeks' duration. Examination revealed ataxia, normal hearing, horizontal nystagmus, absent abdominal reflexes, exaggerated patellar and achilles reflexes and bilateral Babinski reflexes. Spinal fluid showed a colloidal gold test 55543211000; total protein 50 and negative Wassermann reaction. A diagnosis of multiple sclerosis was made. The patient has improved apparently after undergoing a remission and at present there is no vertigo and very little ataxia or nystagmus.

(c) Thrombosis of the Posterior Inferior Cerebellar Artery. This branch of the vertebral artery supplies the inferior surface of the cerebellum and a portion of the medulla. The most common symptoms are sudden vertigo so intense as to make standing impossible, pain and paresthesias over the upper part of the face, dysphagia and ataxia of the upper extremities on the same side. There is also a dissociation of sensation on the

opposite side of the body particularly manifesting a loss of pain and thermal sensations, but touch and pressure are usually preserved.

Case 7. A male, seventy-one years of age, on August 2, 1939, complained that two months previously he suffered a sudden onset of falling to the left when walking. There was severe pain in the left side of the face and the left leg became very weak followed by a numbness of the left face and upper and lower extremities on the right. Examination revealed horizontal nystagmus, ataxia with a tendency to fall to the left, loss of sensation over the left face and lack of perception to pain and temperature over the entire right side of the body, including the upper and lower extremities. There was miosis of the left eye and anhidrosis of the left side of the face with relative enophthalmos. Blood pressure was 164/90 and laboratory tests, including the Wassermann reaction, were negative. The diagnosis was thrombosis of the posterior inferior cerebellar artery. He was placed on potassium iodide with moderate improvement.

The Horner syndrome sometimes may be seen in this condition as evidenced in the above case.

### 3. Functional Causes

(a) Ocular. Ocular reflexes caused by following rapidly moving objects with the eye, plus a constant agitation of the labyrinth are responsible for car-sickness, train-sickness and sea-sickness. The vertigo, nausea and vomiting produced by looking from a height and whirling or swinging are of a similar nature. Disturbed ocular proprioceptive sensations due to heterophoria and refractive errors may be responsible for sensations of vertigo.

(b) Neurasthenia. The neurasthenic patient rarely experiences a true vertigo and when present this symptom is seldom permanent. The complaints of dizziness are usually such sensations as nausea, weakness of the legs and other bizarre symptoms. Before vertigo can be definitely attributed to neurasthenia there must be other evidence of this condition and the examiner must always avoid overlooking an organic neurologic lesion.

(c) Neurocirculatory Asthenia. Neurocirculatory asthenia is a chronic state of ill health characterized by fatigue, palpitation of the heart and other circulatory disturbances which are accompanied by episodes of vertigo, sensations of suffocation and even tetany. Anxiety states usually precipitate such attacks.

### C. CARDIOVASCULAR

The sensation of dizziness may be interpreted as a warning signal in many cardiovascular conditions. This is the result of an alteration of the blood supply to the labyrinth or higher centers.

True vertigo occurs only in a minority of cases but sensations of weakness, special blurring and unsteadiness are common.

### 1. Functional

(a) Vasovagal syncope is characterized by attacks of dizziness, which is rarely a true vertigo, bradycardia, hypotension and clammy skin associated with an attack of fainting. This attack occurs usually in the standing position, lasting two or three minutes, after which, the patient feels well. This is probably the result of a temporary vascular hypotonia with a pooling of blood in the peripheral vascular bed. Such circumstances as soldiers standing at attention, spectators in crowds, usually when the air is warm or humid, and sudden change of position will precipitate an attack in patients who are susceptible. Physical therapy, exercise, altering postural habits, such as the elevated bed suggested by MacLean and Allen<sup>9</sup> and, correcting dietary deficiencies are the common prophylactic measures.

(b) Carotid Sinus Syndrome. The carotid sinus is a plexus of nerves in the arterial wall at the bifurcation of the common carotid artery. These spontaneous attacks of syncope are characterized by vertigo, pallor, sweating and even loss of consciousness. The attacks may be precipitated by pressure from masses in the neck, turning of the head, a tight collar, etc. Physiologically there may be a vagal heart block, depression of vascular tonus causing hypotension, or a central reflex which is abnormal. The diagnosis is made by demonstrating the symptoms by pressure over the carotid sinus.<sup>6</sup>

Case 8. A female, twenty-six years of age, was admitted September 27, 1938, because of attacks of vertigo and syncope. The examination was essentially negative and there was no postural change in blood pressure. However, compression of the left carotid artery produced syncope. Exploration of the common carotid artery revealed a large aneurysm of the internal jugular vein which was so extensive that resection was impossible. The postoperative course revealed some improvement after decompression of the aneurysmal sac but the attacks persist.

This case is illustrative of mechanical pressure upon the carotid sinus producing vertigo and syncope. The treatment consists of removing all contributing local factors and correcting constitutional disorders. In the vagal type where there is a bradycardia, atropine or ephedrine may prevent attacks and exploration of the carotid sinus will also afford relief if a tumor may be encountered, or, even denervation is of value. The above case, in which there was an aneurysm of the internal



jugular vein producing pressure, accentuates the effect of direct pressure upon the carotid sinus.

(b) Stokes-Adams Syndrome. Those of reflex origin are really types of vagal syncope of which carotid sinus syndrome is a form. The reflex may be initiated in the pharynx, bronchi, in the eyeball and other places. Irritation of the sensitive area produces the attack. Atropine is of value at times.

(c) Arrhythmias. Common arrhythmias are responsible for decreased cardiac output and vertiginous or syncopal attacks are the result of paroxysmal tachycardia and extrasystoles.

(d) Vasomotor Instability. Shapiro<sup>13</sup> is of the opinion that most cases of paroxysmal vertigo are the result of vasomotor instability. There is a spasm of the internal auditory artery or terminal vessels supplying the vestibular centers with a resultant anemia followed by violent attacks of nystagmus, ataxia and vertigo. Certain cases of migraine and the aura of epilepsy can be explained upon this basis. McDowell and Patterson<sup>10</sup> report that forty-five per cent of their patients with menopausal symptoms complained of vertigo. During the attack the patient should be placed in a dark room and sedatives administered. Between attacks evidence of vagal or sympathetic activities should be searched for, and the patient with slow pulse, dry skin and small pupils should be given pilocarpine, while those with a rapid pulse, moist skin and large pupils should receive atropine. Shapiro advises, that in the vagal type, acetylcholine will relax the vascular spasm and adrenalin will sometimes terminate an attack indicating that a vasodilatation existed.

(e) Hypertension. Patients with hypertension frequently complain of vertigo. These symptoms are the result of temporary inability to maintain the blood pressure necessary for adequate circulation. The accompanying symptoms of shortness of breath, fatigue and occipital headaches are most common.

Case 9. A female, nineteen years of age, complained of headache, nervousness, vertigo and dyspnea for one year. The blood pressure was 175/118 and the pulse was 120. On December 18, 1934, she underwent a left subtotal adrenalectomy. The postoperative blood pressure was 85/72. On November 11, 1935, the blood pressure was 160/110 and the pulse was 96. The symptoms persisted with a recurrence of headaches. On November 13, 1935, a right subtotal adrenalectomy and resection of the splanchnic nerves, twelfth dorsal, first and second lumbar sympathetic ganglia were performed. The postoperative blood pressure was 120/70 and the pulse was 108. The blood pressure on September 26,

1940, was 140/90 and the pulse was 76. There has been complete relief from symptoms.

In a selected group of young people splanchnic resection and subtotal adrenalectomy are of value. In other cases in which the surgical procedure is deemed inadvisable, palliative attempts to lower the blood pressure should be attempted.

## 2. Organic

(a) Arteriosclerosis. This is the most common cardiovascular disease producing vertigo; the symptoms are created by rapid changes in posture and last only a short time. The occurrence of severe attacks in a patient suffering from arteriosclerosis may be the first sign of a cerebral accident.

Case 10. A male, sixty-one years of age, complained of headache and vertigo for five years. On March 18, 1937, a blood pressure of 200/120 was found. He was placed on phenobarbital with moderate relief from symptoms. One cerebral vascular accident has occurred since, involving the right extremities with partial recovery. The blood pressure is 180/90. Relief from subjective symptoms has been achieved by a curtailed regime and the administration of theobromine and phenobarbital.

(b) Syphilis, Coronary Thrombosis, Aortic Aneurysm, Valvular Lesions and Similar Conditions Often Superimposed by Arteriosclerosis. These conditions are often responsible for deficient circulation and manifestations of vestibular symptoms. The therapy is that of sedation and treatment of the condition at fault. However, occasionally this may be confused with cerebral injury as shown in the following case reported by one of us.<sup>2</sup>

Case 11. A male, fifty-nine years of age, on February 7, 1938, fell from a ladder suffering loss of consciousness and a linear fracture of the left temporal region of the skull. Apparent recovery took place in three weeks. However, the patient complained of pain in the left temple, shortness of breath, vertigo and inability to sleep. Repeated neurologic examinations including an estimation of cerebral spinal fluid pressure and electrocardiographs were negative. The patient died suddenly on April 18, 1939, and at autopsy the nervous system was negative but a coronary sclerosis with occlusion was demonstrated.

Therefore, it is reasonable to assume that many people who are past the fourth or fifth decade and have suffered from a cerebral injury with resultant symptoms of vertigo and dyspnea should be suspected of suffering from coronary heart disease. However, as in the above case, electrocardiograms are often negative. Patients should be treated

symptomatically in an attempt to prolong their lives and afford comfort.

Case 12. A female, seventy-seven years of age, was admitted on August 28, 1940, complaining of vertigo and falling backward for two years. There was a hypertension varying from 200/100 to 250/120, of ten years' duration and a cardiac asthma for three years. Examination revealed an enlarged heart; the electrocardiogram tracings indicated an inverted T wave in lead 1, an inverted T wave in lead 4, and slurring and notching of QRS deflections in leads 1 and 3, significant of bundle branch blocking and coronary heart disease. The neurologic examination was negative.

This case indicates an organic reason for vertigo because of coronary thrombosis and bundle branch block preventing adequate circulation to the brain.

### 3. Blood Dyscrasias.

Patients suffering from simple anemia, bleeding diseases, leukemias, pernicious anemias, etc., often observe vertigo to a varying degree. Labyrinthine tests are usually negative, and the etiology of the vertigo may be the result of anoxemia, degenerative changes or leukemic deposits. The treatment is that of the dyscrasias and multiple blood transfusions are of some value in relieving these symptoms.

Case 13. A female, six years of age, was admitted November 23, 1936, complaining of vertigo and falling to the right for three days. The examination revealed bruised areas over the body and the child was admitted because of suspected head injury. Neurologic examination was negative but there were multiple petechial hemorrhages over the body and mucous membranes. Hemoglobin of the blood was 60 per cent; red blood count was 3,600,000; and white blood count was 24,100, one polymorphonuclear cell and 99 small lymphocytes. The child developed an enteritis and was given multiple transfusions. The blood picture varied and on January 2, 1937, the hemoglobin was 50 per cent; red blood count was 2,460,000; and the white blood count was 63,800. The coagulation time was six minutes, bleeding time eight minutes. There were 99 lymphocytes and one polymorphonuclear cell. The child died January 6, 1937.

This case is illustrative of vertigo produced by lymphatic leukemia.

### D. MÉNIÈRE'S SYNDROME<sup>15</sup>

In 1861, Ménière described a triad of symptoms referable to the vestibular system, namely, vertigo, tinnitus and nerve deafness. Associated with these symptoms there is often nausea, vomiting and headache. The symptoms are provoked by change of position. The patient is usually acutely ill and

prefers to recline in one position lest a change provoke a more acute exacerbation of these distressing complaints. Although the subject has been considered under the subheading of the disturbed intralabyrinthine tension, it also must be differentiated from a neuroma of the acoustic nerve. This symptom complex does prevail as a distinct physical entity. Ménière was of the opinion that this was the result of hemorrhage into the labyrinth, but subsequent observers have felt that his ideas were erroneous, since it is now believed that this condition is probably due to an intralabyrinthine edema because the patients have responded satisfactorily to the administration of ammonium chloride and adherence to the salt free diet advocated by Furstenberg. As mentioned previously, Shelden and Horton obtained brilliant results with the administration of histamine either subcutaneously or intravenously; the dosage is dependent upon the severity of the symptoms.

Case 14. A female, forty-nine years of age, was admitted on October 15, 1938, complaining of vertigo at intervals for two months. Vertigo was associated with nausea and vomiting and accentuated by sudden change of position. There was some reduction of hearing of nerve deafness type and tinnitus of the right ear. No relief was obtained with the administration of sedatives, hypertonic glucose or spinal drainage. Some relief occurred on a salt free diet but the vertigo persisted and on January 26, 1939, histamine therapy was instituted, beginning with 0.5 of a cubic centimeter and increasing to one cubic centimeter twice weekly. There has been no recurrence of symptoms since that date.

This is a typical case of Ménière's syndrome which has been relieved with histamine therapy.

### TREATMENT

The management of a patient suffering from vertigo, as in many other conditions, depends on the determination of the etiologic factors. Pathologic processes in the labyrinth, the central nervous system and cardiovascular renal systems must be eliminated. Proper management of middle ear disease and sinusitis, removal of a plug of cerumen or catheterization of the eustachian tube are of value when indicated. A detailed neurologic examination may reveal an early lesion in the course of the vestibular pathways or central nervous system. It is obvious that a thorough laboratory examination and a general physical resumé are of extreme importance. The treatment then depends entirely upon its cause. Symptomatic treatment with proper drugs may afford the patient complete relief. In carefully selected cases.



surgical procedures varying from an attack upon the vestibular portion of the eighth cranial nerve or exploration of the cerebrum or cerebellum may be necessary and, in isolated instances, attacks upon the splanchnic nerves and adrenal gland are of value. Therefore, it is obvious that an accurate history, thorough physical examination, including the optic fundi, perimetric fields, otologic tests and a careful survey of the neurologic status with supportive laboratory procedures, will indicate the course of subsequent therapy.

## SUMMARY

Vertigo is a false sensation of movement which is the result of vestibular disturbances which may be labyrinthine, neural or cardiovascular in origin. Treatment of a patient suffering from these symptoms depends upon the correct differential diagnosis, thorough understanding of the etiologic, physiologic and pathologic factors, carefully taken history, detailed examination and corroborative laboratory tests. The treatment is entirely symptomatic varying from hygienic measures to surgery, as indicated in each individual case.

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## HOSPITAL EPIDEMIOLOGY

Applications in a Situation Wherein Active  
Distribution of *Corynebacterium Xerosis*  
and Non-Toxin-Producing Diphtheria  
Bacilli Synchronized with the  
Occurrence of Actual  
Diphtheria Infection

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Felsen and Wolarsky in a recent publication<sup>1</sup> emphasize the need, especially in the larger type of hospital, for a staff member who can carry out the duties of hospital epidemiologist. These authors cite the arrangements in certain Bronx hospitals wherein physicians trained in communicable disease and the technics of medical bacteriology assume these responsibilities with a definite degree of success in the control of communicable disease within these hospitals. From this standpoint it has seemed of interest to report the plan which for several years has been in effect in the University of Iowa Hospitals.

With so large an institution drawing patients from an area of 55,586 square miles about it and with only very limited means of ascertaining beforehand whether prospective patients have been exposed to or are carriers of communicable disease, the potentialities of infection are exerted more strongly here than in many hospitals. Also, as suggested by Felsen and Wolarsky, the necessarily large staff of such a group of hospitals, unless closely supervised, is a constant factor for potential infection. The desire to control these factors and to coordinate and stabilize efforts toward communicable disease control by the various services of the hospitals, led to the creation of the position of hospital epidemiologist.

The person assigned to these duties is a member of the teaching staff of the College of Medicine. While his time is planned about evenly between the hospital epidemiology, teaching and research, the time required for the epidemiologic investigations must necessarily vary with season, general prevalence of communicable disease in the state and extent of invasion of any specific disease into the hospital area. He works in an advisory capacity to any department which may be concerned and as a liaison officer between these departments and the hospital administrator. He also cooperates with the Communicable Disease Division of the State Department of Health and with the local city health officer by submitting reports on investigations wherein sources or contacts extend beyond

the confines of the hospitals. Although health examinations and immunizations of the hospital staff and employees are carried out by a different division of the Department of Hygiene and Preventive Medicine, the epidemiologist has working contacts with this group and access to their case records. In a similar manner he retains close working relations with the hospital sanitation officer who is a graduate in sanitary engineering.

Control procedures suggested will vary with the ward or service concerned as well as with the disease in question. These variations may be determined by differences in physical set-up, types of patients or the degree of experience the staffs of different services may have had with communicable disease. For example, a case of measles occurring in a child admitted to the Ophthalmology Service three days previously, will probably require less extensive procedures than if the same case had been admitted to the girls' ward of the Orthopedic Service. In the first instance, fewer patients of the susceptible age group are usually involved, children are regularly admitted to two-bed rooms (rather than being placed on the wards) and isolation facilities are available in these areas. As opposed to this set-up, the girls' ward in Orthopedics Service with twenty-seven beds must be considered in toto as either a clean or contaminated ward.

The situations dealt with are varied. A new system has been arranged for handling and laundering contaminated hospital linen. Procedures, aimed at decreasing tuberculosis rates among the staff as a result of attending open pulmonary tuberculosis cases, are being instituted. Assistance has been given in reorganizing immunization procedures of staff and employees and in the establishment of receiving areas on certain children's wards where ward exposure had occurred with some degree of frequency. During this same period associates have dealt with such problems as the presence and numbers of pathogenic organisms in the air of operating rooms, of rooms on isolation service, of clinics and of corridors,<sup>2</sup> and elimination of cross connections in the plumbing of the institution. In addition, the University Department of Health supervises the production of all milk used at the hospitals which operate their own pasteurization plant.<sup>3</sup> The Department of Health also regularly examines ice cream mixes purchased from sources approved by the sanitary officer.

Barnes,<sup>4</sup> in a recent publication, has summarized several epidemiologic investigations made in these hospitals. A more complete report of one of these problems, the entrance of scarlet fever into the Obstetrics and Maternity wards in 1938 has been submitted by Diddle, Trussell and Plass.<sup>5</sup> A

threatened epidemic of diphtheria occurred in October, 1940, and is being reported here in some detail with an attempt made to show how the epidemiologist works under the set-up and circumstances mentioned. It illustrates also the difficulties involved when active distribution of xerosis and other diphtheria-like organisms synchronizes with the occurrence of actual diphtheria infections among the same general group.

#### EPIDEMIOLOGIC INVESTIGATIONS

On October 4, W. C., an adult male patient, on the Otolaryngology Service, developed sore throat and fever of 102 degrees. Examination showed reddening of the oral pharynx and a dirty grayish-white membrane forming over the tonsillar areas. On the following day cultures revealed the presence of organisms with the morphologic and staining characteristics of *Corynebacterium diphtheriae*. The patient was transferred to the Isolation Service. Virulence tests completed October 9 gave positive results.

Epidemiologic investigations were started October 5. It was learned that the patient had been hospitalized for twelve weeks and had had no visitors for over a week prior to the onset of diphtheria. Also, he had undergone an operation on September 15 for multiple abscesses over the area of the frontal bone and had been entirely apart from other patients for practically three weeks. Therefore it was assumed that the source of infection most probably had been a carrier in the immune attending staff. The nine persons who had cared for him during the preceding week were cultured on October 5. On October 7 five of this group (a resident physician, the nursing supervisor, two student nurses and a nurse's aid) were found to have positive cultures and were isolated. Cultures from the resident were proved virulent. After a conference with the departmental staff, the Otolaryngology Service was closed October 7. Since the out-patient division of the service is attended by the in-patient staff, only emergency out-patient cases were seen. Similarly only emergency admissions to the in-service were authorized and discharges were permitted only after negative throat cultures. A second conference, with the division of Obstetrics, was held, since ambulatory women patients on the Otolaryngology Service had shared service rooms with the patients on the adjoining ante partum ward. It was deemed advisable that this group also be restricted until culture surveys could be obtained.

Investigation of work sheets in the Nurses' Training School office revealed that one of the student nurses found on October 7 to have a



positive throat culture had worked the day of October 6 on Admissions Service. She had cared for ten patients who were admitted to some one of the five following services: Medicine, Surgery, Gynecology, Ophthalmology and Urology. These ten patients were isolated on their respective services the day of October 7 and four were found to have positive throat cultures. The second student nurse found to have a positive culture on October 7, had worked the days of October 4 and 5 on the Medicine Service doing general floor duty. Consequently medical wards were cultured October 7 and 8. These, and other cultures on the groups indicated above, revealed a high percentage of positives. Patients were isolated in side rooms on their respective services. Staff and employees taken off duty were sent either to their homes or to the Isolation Service. Those spending the exclusion periods in their homes did so upon permission granted by the local city health officer.

On October 9 another patient from Otology was transferred to Isolation with a tentative diagnosis of diphtheria. While the case was clinically typical and cultures were positive the diagnosis could not definitely be ascertained. Since tonsillectomy had been performed on October 6, it was difficult to decide that the membranes were not posttonsillectomy in nature and although the throat culture remained positive for several days the laboratory group was unable in this instance to isolate the organisms for virulence tests.

On October 11 a summary of the epidemic status showed two cases, a virulent carrier, and fifty-four others with positive throat cultures but on whom virulence tests were as yet incomplete. Although the cases and virulent carriers were all from the same service, the trails of the other fifty-four extended to staff, patients and employees on four other major services and to the Housekeeping, Nutrition and Traffic Departments. A general conference was held with the hospital administrator, the heads of clinical departments, the director of the hospital bacteriology laboratory, and the directors of Student Health Service to decide future routes of procedures. Restrictions similar to those already in effect on Otology and Ante Partum Services were advised for a minimum period of one week, the time deemed necessary by the epidemiologic group to gather more nearly adequate information as to possible sources, percentage of virulent cultures and possibilities of secondary cases.

On October 12 the last virulent organism was found. This patient, an immune adult, had been admitted to the Otology Service the day following onset of the initial case. Although milk was shown to be free from organisms of diphtheritic

morphology and staining, they were present in ice taken from hoppers in Otology and Ante Partum Service kitchens. The crushed ice in the central freezing room and in other service areas was found not to contain these organisms. On October 15 with only three virulent organisms found among 87 completed tests and the organism in the crushed ice identified as *Corynebacterium xerosis*, restrictions were removed and no subsequent cases of diphtheria developed.

#### DISCUSSION

The situation involved a total of 656 persons (Chart I); 122 were found to have organisms with staining and morphology suggestive of toxin-producing diphtheria bacilli. Of this number four cultures (three confirmed and one questionable) were shown to be capable of producing toxin. While no definite source for the toxin-producing

CHART I

Results of Throat Cultures of 656 Persons Associated with the Epidemic (October 4 to 21)

Service	Number with Positive Cultures		Number with Negative Cultures	Totals	Per cent Positive
	Virulent	Avirulent			
Medicine.....	0	11	82	93	11.8
Orthopedics.....	0	8	85	93	8.6
Pediatrics.....	0	1	10	11	9.9
Obstetrics and Gynecology.....	0	19	196	215	8.3
Antepartum.....	0	13	27	40	42.5
Otology.....	3	67	130	200	35.0
Ophthalmology.....	0	0	4	4	0.0
Totals.....	3	119	534	656	18.4

strain of diphtheria bacilli was ascertained it appears to have been the resident physician who had recently returned from a vacation. Neither the immune carrier nor the questionable case could have been responsible since they were not on the service prior to the time W. C. developed diphtheria.

As shown in Chart I, the frequency of positive cultures was to an extent dependent upon the degree of physical contact with the Ante Partum and Otology wards where the ice contained the diphtheria-like organisms. Services such as Surgery and Urology, with fewer physical connections with these areas, showed invasion by the organism only to extent of the cases received from admissions on October 6 when the student nurse recently on Otology worked on admissions.

For comparison of the incidence of diphtheria and diphtheria-like organisms in groups not exposed to the existing hospital environment a series of 106 admissions and student health cultures were taken beginning October 16 (Chart II). No virulent organisms were found. Two of the num-

ber (1.8 per cent) showed avirulent diphtheria organisms. This value of 1.8 per cent much more nearly corresponding with the expected incidence, indicates an extensive spread of *Corynebacterium xerosis* from the ice hoppers to the hospital group. The incidence of 8.3 per cent to 11.8 per cent positives on the service not having the organisms in the hoppers probably represents a combination of non-toxin-producing diphtheria together with certain numbers of xerosis carried there by exchange of staff.

CHART II

Results of Throat Cultures of 106 Persons Not Associated with the Epidemic (October 16 to November 1)

Service	Number with Positive Cultures		Number with Negative Cultures	Totals	Per cent Positive
	Virulent	Avirulent			
Student Health...	0	0	9	9	0.0
Admission Cultures on Patients	0	2	95	97	2.0
Totals.....	0	2	104	106	1.8

The xerosis organism is described by Topley and Wilson<sup>6</sup> as appearing not unlike *Corynebacterium diphtheriae* in films from cultures grown on Loeffler's serum for twenty-four hours at 37 degrees, centigrade. They further state that its differences consist in a preponderance of barred or segmented forms, an infrequency of clubbed forms and in conspicuous metachromatic granules. Our particular strain showed marked granulation and absence of barred or segmented forms. Differentiation was necessarily made by cultural reactions. Several non-virulent forms from throat cultures implanted to fermentation tubes and tellurite media showed these organisms to be identical with those from the ice hoppers.

That all of the non-toxin-producing organisms were not xerosis was proved culturally, because certain test specimens gave reactions typical for diphtheria bacilli. No attempts were made to ascertain the relative percentage of the two organisms.

## SUMMARY

1. A description of centralized efforts toward control of communicable disease in a large hospital is given.

2. A limited hospital outbreak of diphtheria is described with the peculiarities of the epidemic centering about the coincidentally high prevalence of non-virulent diphtheria-like organisms in the ice hoppers on the service where the cases and carriers were detected.

3. The conduct of the investigations and the control measures established are given to show how the hospital epidemiologist may work on such

occasions to advise and to correlate the defense maneuvers of the hospital areas concerned.

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## DIABETES MELLITUS WITH PANCREATIC CALCULI AND MALIGNANT ENDOCARDITIS

## CASE REPORT

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This case history is thought to be of interest both clinically and pathologically. It sets forth the clinical and postmortem findings of a male diabetic patient, fifty-eight years of age (diabetes mellitus for seventeen years), who was found at autopsy to have the pancreatic ducts almost completely occluded with many calculi. He entered the Iowa Methodist Hospital on March 31, 1941.

**Entrance Complaints:** Sore throat, anorexia, malaise, fever, backache and palpitation of the heart for ten days. Unproductive cough for seven days. Painful infected left large toe, three weeks. Diabetes mellitus, which necessitated large amounts of insulin and was poorly controlled.

**Past Illnesses:** Measles in 1925 with resultant bilateral deafness. Diabetes mellitus, seventeen years, which necessitated hospitalization four times. Jaundice and frequent gastro-intestinal upsets, 1929. Pancreatitis, 1929.

**Family History:** Nothing relevant.

**Physical Examination:** A well-developed semi-comatose male adult, fifty-eight years of age, white, married, responded slowly to questioning. Temperature, 103 degrees; pulse, 116; respirations, 16. The tortuosity of the radial and temporal arteries and the rather marked arcus senilis



evidenced arteriosclerosis, grade 3. Throat injected, grade 3. Tongue coated and dry. Heart regular. A soft systolic murmur heard over the entire precordium. Blood pressure, 140/60. Many bilateral coarse râles in the bases. Examination of the abdomen showed an indefinite mass in the left upper quadrant that was not tender. Circulation in the feet was poor. Dorsalis pedis, not palpable. Many infected areas, both legs and feet, with a chronic indurated ulcer on the left large toe. Reflexes physiologic.



Fig. 1. Gallbladder showing acute pseudomembranous degeneration of the wall.

**Laboratory Findings:** Urine examinations (fifty); traces of albumin; many granular casts; acetone, three plus on admission; diacetic, negative; sugar ranged from traces to 2.6 per cent. Blood examinations: hemoglobin, 11.9 grams; red blood count, 4,170,000; white blood count, 11,900; lymphocytes, eight; monocytes, two; neutrophils, 90. Subsequent white blood counts ranged from 18,000 to 38,000. On April 1 green-producing streptococci were present in throat culture; Kline and Kahn tests were negative. Malta fever agglutination negative on April 4; stool normal. On April 5 blood urea nitrogen was 35 milligrams. Blood culture showed streptococcus hemolyticus present.

**Clinical Course:** The temperature spiked daily to 102 and 103 degrees; pulse and respirations remained elevated. The urine was tested every two hours on the floor and insulin given as necessary, according to the color change of Benedict's

solution, so that his diabetes was kept under good control and the urine remained acetone-free. Sulfanilamide, grains 20, was given every four hours and two 1,000 cubic centimeters of one per cent sulfanilamide were given subcutaneously; 1,000

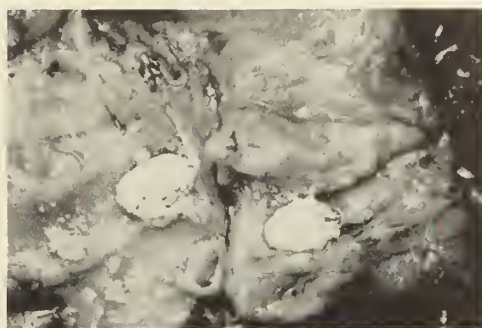


Fig. 2. Duct of Wirsung showing large pancreatic calculi.

cubic centimeters of five per cent glucose in normal saline were given intravenously frequently; 500 cubic centimeters of human serum were administered on April 6. In spite of therapy, the patient became progressively worse; the temperature attained a high plateau type, and the patient died April 9, on the tenth day in the hospital.

**Anatomic Diagnosis:** (Postmortem examination by Richard F. Birge, M.D., pathologist, Iowa Methodist Hospital, Des Moines, Iowa.)

1. Acute vegetative bacterial endocarditis of the mitral and pulmonary valves
2. Septicemia (streptococcus hemolyticus), with
  - (a) Acute focal pseudomembranous cholecystitis



Fig. 3. Pulmonary valve showing large infected thrombi.

- (b) Acute embolic nephritis
- (c) Acute splenitis
- (d) Mild acute focal myocarditis
- (e) Parenchymatous degeneration of the liver

3. Chronic obstructive pancreatitis
  - (a) Obstruction of the main and accessory pancreatic ducts and branches by innumerable calculi (calcium carbonate)
  - (b) Diabetes mellitus (clinical)
4. Terminal aspiration bronchitis
5. Cardiac hypertrophy (weight 350 grams)
6. Generalized arteriosclerosis
7. Chronic ulcer, left great toe
8. Cortical adenoma of the right adrenal gland
9. Dilated stomach
10. Left apical scar



Fig. 4. X-ray showing multiple pancreatic calculi throughout the entire pancreas.

#### SUMMARY

Pancreatic calculi are rare, and most of the cases reported are those discovered at postmortem examinations. It is of clinical interest here that the stool examination was normal, whereas the pancreatic ducts were grossly completely occluded with calculi. Although pancreatic calculi are infrequently reported in the literature, we believe them to be a more common cause of pancreatic disease than is commonly considered. It is our opinion that pancreatic calculi are most often caused by infections, since they are usually of calcium carbonate or calcium phosphate deposits, which suggest a sequelae of chronic inflammation. Most reports show calculi forming early in the disease, with diabetes occurring later. This case shows diabetes occurring early and calculi later.

This case demonstrates multiple pathologic findings at autopsy. The cause of death was streptococcus hemolyticus septicemia and malignant endocarditis involving the mitral and pulmonary

valves, occurring secondary to the infected throat, the chronic indurated toe ulcer, or possibly the acute cholecystitis.

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#### RETROPOSITIONS AND INCARCERATION OF THE PREGNANT UTERUS

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Posterior displacement of the uterus is common in pregnancy; in fact it is so common that little concern arises from its presence. Retroflexion or retroversion as a result of sudden increased abdominal pressure may occur, such as from coughing or lifting. Retropositions are much more common in multiparae than in primiparae. However, it is usual that pregnancy occurs in the uterus already displaced.

Spontaneous restitution occurs as a rule, the uterus gradually growing out of the pelvis by the third month. Sometimes, because of adhesions to the fundus, tumors of the pelvis and the promontory of the sacrum, spontaneous restitution does not occur. The frequency of incarceration has not been determined, since many abortions occur because of the existing pathology. Retroversions usually produce symptoms early, such as bearing down pains, fullness in the pelvis and radiating pains of the sacral and lumbar nerves. At the end of the third month, bladder symptoms appear, the frequent desire to urinate, often pain in the pelvis and dribbling of urine with retention or residual urine. These are early warning signs with which we are all acquainted. It is at this time that we may be of assistance in aiding the uterus to rectify itself. Knee-chest positions, mild manipulations, bed rest and lying on the abdomen practically always bring about a correction in the position of the uterus.

Abortion is a frequent termination of the retroflexed pregnant uterus, usually occurring after about two and one-half months of pregnancy, and is caused by a disturbance in the uterine circulation. Contractions during abortion may lift the uterus out of the pelvis, obscuring the possible cause of the abortion. A retroflexed uterus, after abortion, does not drain well and chronic endometritis frequently follows.

Incarceration of the growing uterus in the pelvis is the most serious outcome of retropositions and must be rectified. The symptoms which demand interference come from the bladder, because it cannot be emptied properly and may become distended due to the compression and dis-



tortion of the urethra. Dribbling is an early symptom, cystitis of the hemorrhagic type and secondary infection follow. The uterine cavity also may become infected and septicemia occur. DeLee reports the rupture of a bladder into the abdominal cavity. If the condition progresses far enough, necrosis of the bladder wall may occur and peritonitis naturally follows. Gangrene of the bladder has been reported with secondary infection, usually *Bacillus coli*. Cases are reported of the expulsion of the contents of an infected uterus through the rectum or the bladder. These are extreme pictures and the occurrence is rare because in practice the pathology of a retroverted pregnant uterus corrects itself or the physician aids with mild manipulation. One author estimates the incidence of true incarceration as 1:25,000.

*Diagnosis:* The diagnosis is seldom difficult. A pregnant woman, multiparae, usually, giving a history of dysuria or dribbling or "blood spotting", should be examined with retroflexion or retroversion in mind. A distended bladder, felt abdominally, is often present. Catheterization is needed for relief. Vaginally one finds the cervix pressed upward against the pubis, or even above the pubis. The cul-de-sac is filled with a soft tumor which bulges into the vagina or may even distend the perineum. This tumor is the fundus of the pregnant uterus. In other words it is "upside down". Bloody urine concludes the findings and calls for correction of the incarceration.

*Prognosis:* True incarceration is now a rarity due to modern obstetric care. Dührssen collected 67 cases of deaths in which sixteen died of uremia and exhaustion, seven of sepsis, eighteen of peritonitis, eleven of rupture of the bladder, three of pyemia, two of rupture of the peritoneum and vagina, five of errors of art, (punctures with a catheter of torn uterus during manipulation), one of ileus and four of unknown causes.

*Treatment:* Treatment consists of early diagnosis of retroplacements of a pregnant uterus, gentle attempts to replace the uterus and if successful, a hard rubber pessary for maintaining the position until the end of the fourth month. The use of knee-chest position, three times a day for one-half hour and sleeping on the side or abdomen, often aid in the correction. If there is no change after three weeks' treatment, or four months' pregnancy, it is wiser to put the woman to bed and keep the bladder empty, by catheter if necessary. This is often difficult because of the elongated urethra, its distortion and edema of the bladder. "This is truly a job for the physician", not a nurse. A greatly

distended bladder should be emptied slowly, taking three hours if necessary. Emptying the bladder most frequently allows the correction of the uterus by pulling gently down on the cervix with a vulsellum and pushing the fundus up; one finger in the rectum often is of service in beginning the correction. An anesthetic may be needed for relaxation. Too great force may rupture a soft congested uterus or tear a vascular adhesion causing severe internal hemorrhage.

If manipulation will not restore the uterus, other measures must be taken. If the urine becomes bloody, or the progress of events shows no signs of correction, but exaggeration of the incarceration, one must not wait until necrosis of the bladder begins or ascending infection occurs. Laparotomy with gentle release of the uterus from the pelvis may allow pregnancy to continue. Abortion, however, frequently follows, but even so, infection and bladder damage can be avoided. If the uterus is infected, hysterotomy from below is suggested by DeLee. Bumm drained the liquor amnii off through the posterior vaginal wall with an aspirating needle in one case and pregnancy continued.

#### CASE REPORT

*Entrance Complaints:* Mrs. M., forty-five years of age, presented herself at the hospital, March 10, 1940. The patient stated that she was about three and one-half months' pregnant. Her last menses was November 20, 1939. She felt well during the early weeks of pregnancy but in February, she began to have a feeling of pressure in the pelvis. She reported to a physician on February 28, 1940, at which time she was about three months' pregnant. After examination, he instructed her to use knee-chest positions four times a day and to remain in bed and to lie on her stomach with one knee drawn up. Two weeks before admission she began to have nausea and vomiting. The past week she had had much more pressure in the pelvis even though she was in bed. She had had difficulty in passing her urine and then only in small amounts which did not relieve her. The past three days she had had a slight thin bloody discharge but no cramps. Constipation had been bothersome and she had vomited most of her food.

*Past History:* She had been well during the past years except for a gallbladder attack. After the gallbladder was removed she had no further trouble. Menses had begun at thirteen years of age, were regular, not profuse, and accompanied with no pain. Foods began to make her feel nauseated about two weeks before admission, and her stomach felt "upset" most of the time. Vomiting occurred during the last week. The bowels moved daily until the last week, when she could

not get a bowel movement without an enema or a laxative.

*Obstetric History:* She had six children, all living and well. Instruments were used during the last delivery, after she had been in labor for two days. She recovered normally except that since the last baby the womb "comes almost outside" when she was on her feet for a long time.

*Physical Examination:* The patient was a well-nourished white woman, with a temperature of 97.4, blood pressure of 115/70, pulse 64, and respirations, 18. The head and neck, breasts, lungs, heart, extremities and abdomen were normal. There was a brownish mucous discharge from the pelvis. The cervix was one and one-half inches above the symphysis of the pubis. The bladder was distended almost to the umbilicus. The uterus with pregnancy completely filled the cul-de-sac, lying on the perineum approximately one and one-half phalanges from the extroitus. The pelvic organs were not distinguishable. A rectal examination revealed the uterus pushing the rectum inferiorly and posteriorly. The patient was admitted to the hospital with a diagnosis of incarcerated uterus.

*Treatment:* The patient was put to bed and unsuccessful attempts were made for restoration of the uterus. She was given a soft diet, reticulogen, 0.5 of a cubic centimeter daily, luminal, grains one-half at supper and one grain at bedtime. The blood count was 5,500,000 erythrocytes and 20,800 leukocytes; hemoglobin was 60 per cent. On the next day, March 11, unsuccessful attempts were again made to restore the uterus. There were no bloody vaginal discharge and no definite complaints. Laparotomy was advised and Dr. E. E. Magee of Waterloo called in consultation at 10:00 p. m. He attempted to restore the uterus to its normal position, but was unable to reach the cervix with the vulsellum, and further manipulation was unsuccessful. Catheterized samples showed red blood cells and some pus cells. After consultation it was agreed that laparotomy was advisable.

*Operative Record:* The laparotomy was performed March 12. A four months' pregnant uterus was found, tightly locked in the pelvis, deep in the cul-de-sac. It was completely retroverted with the cervix two and one-half inches above the pubis and pointing anteriorly. Both ovaries and tubes were normal. Small uterine fibroids were present, the size of a small orange. The uterus was delivered out of the pelvis with considerable difficulty. Hysterectomy was performed by clamping both broad ligaments, amputation and coning out of the cervix. The broad

ligaments were sutured with chromic catgut, and all covered with peritoneum.

*Postoperative Course:* Her immediate postoperative condition was good. There was some emesis and moderate diaphoresis. She was given 1,000 cubic centimeters of five per cent dextrose intravenously, and morphine, grains 1/6 for pain as necessary. On March 13, she complained of some pain in the operative region and back. Some nausea and emesis were present. The blood count showed 6,240,000 erythrocytes and 12,000 leukocytes; hemoglobin was 70 per cent. On March 15, there was some abdominal distention, but her condition remained good. All black silk sutures were removed on March 18, and the patient was allowed to sit up in bed. She was given luminal, grains one and one-half at bedtime. On March 24 she was allowed to sit in a chair for short intervals and allowed to walk on March 25. The patient was discharged from the hospital on March 28, in good condition.

*Indications for hysterectomy:* First, incarcerated pregnant uterus with fibroids; second, complete prolapse of the uterus when not pregnant; third, multiparae, aged forty-five, seventh child; and fourth; probable dead fetus, external bloody discharge.

## CHRONIC INVERSION OF THE UTERUS

### CASE REPORT\*†

ARLINE M. BEAL, M.D., Davenport

A Brahmin woman, thirty years of age, was admitted to Kugler Hospital on October 10, 1935. She came for relief of profuse red discharge from the vagina.

The patient had had eight normal deliveries at home. All children were living. The last child was born four years before admission and the patient was attended by a native village midwife. During the delivery the patient suffered more than usual but could give no reason for it. She believed her recovery to be uneventful and normal. Previous to the last pregnancy, periods had been normal in quantity and quality and there had been no dysmenorrhea.

Six months after the last delivery (three and one-half years before admission), bleeding began and continued for several months. Discharge was only slight, there was no bearing down sensation, and, to the knowledge of the patient, there was no evidence of any prolapse at this time. There

\*Presented before the Forty-fourth annual meeting, State Society of Iowa Medical Women, Davenport, May 14, 1941.

†From the Department of Gynecology and Obstetrics, Kugler Hospital, Guntur, South India.



was slight abdominal pain, constant in character, for about one and one-half years, when the pain gradually disappeared.

During the past two years there had been no pain of any kind, but bleeding had become more irregular and less constant, being quite profuse with passing of large clots for a period of about ten days, with intervals of ten days or more when no bleeding occurred. During these past two years, the patient had been conscious of a mass protruding from the vagina on defecation. Weakness, headaches, dyspnea and palpitation had been increasing, especially during the past two years.

*Physical Examination:* The patient was very anemic. Mucous membranes and conjunctivae were pale. The heart sounds were rapid but regular. A hemic murmur was present. The hemoglobin was 35 per cent by the Sahli method, and blood was positive for benign tertian malaria. Stool examination was negative for hook worm. An examination of the abdomen revealed no tenderness, rigidity or masses. A mass, the size of a large lime, was protruding from the vagina, having the appearance of raw meat and bleeding easily on touch.

The patient had been admitted to the hospital with the diagnosis of a cervical polyp made by one of the assistants, and under sterile conditions an attempt was made to remove the polyp. She soon discovered the error in diagnosis, tied the small bleeding vessels, wrapped the mass in gauze moistened in warm normal saline and sent for the author. Further vaginal examination confirmed what little had already been reported, but no uterus could be found in the pelvis. The fornices were clear. There were several fresh incisions on the left lateral side of the protruding mass near its attachment. The peritoneum had not been opened. The opening into the left tube could be seen with some difficulty. A diagnosis of chronic complete inversion was then made.

*Operation:* Under chloroform anesthesia the prolapsed uterus, cervix and vaginal walls were painted with tincture of iodine. The prolapsed fundus was raised and a vertical incision was made through the posterior portion of the cervix down toward the projecting fundus, thus exposing the peritoneal surface, tubes and broad ligaments. Tubes, broad and round ligaments were ligated and sutured together. A fresh incision was made nearer the cervix than those already made and by thus amputating the fundus a partial hysterectomy was performed. Bleeding vessels were tied. The peritoneal covering was sutured and later the uterine muscle layer was closed. A drain was left for twenty-four hours in the posterior cul-de-sac.

*Postoperative Course:* Recovery after the fourth day was uneventful. On the third day the temperature rose suddenly to 105 degrees. The white blood count was 7,050. No pain or tenderness was present in the abdomen. No cause could be found, unless it was the malaria. Quinine hydrochloride was given intramuscularly on the third and fourth days. Temperature on the fourth day was 102 degrees, and after that did not exceed 100 degrees during the first week. Thereafter it was normal. The patient was discharged on the seventeenth day. Transfusion was not done because no donor with blood which was compatible could be found. When discharged, the hemoglobin had already increased to 45 per cent. On vaginal examination, the cervix was found to be smooth and regular. A small uterus was anteverted. The fornices were clear.

*Follow up:* The patient was seen frequently in the dispensary. Her periods were regular but scanty.

#### THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

##### TYPE I PNEUMOCOCCUS MASTOIDITIS WITH MENINGITIS

CURE BY SULFAPYRIDINE, SPECIFIC SERUM AND MASTOIDECTOMY

H. E. THOMPSON, M.D., and D. F. WARD, M.D.  
Dubuque

Ten years ago pneumococcus meningitis was generally recognized as having a fatality of about 100 per cent. Since the discovery of sulfanilamide and its derivatives and with new knowledge of the types of pneumococci, some cures have been obtained. Probably if all cases were diagnosed early, treated effectively with the drug or one of its modifications, specific antipneumococcus serum, and if the focus of infection was eradicated, a much higher percentage of cures would be obtained. The following case is of interest because it illustrates these points and also because it emphasizes the need for independent thought upon the part of the clinician in the diagnosis of mastoiditis rather than dependence upon roentgenograms. He should recognize that in mastoiditis as in other forms of bone infection, early changes are not demonstrable in x-ray films.

##### CASE REPORT

The patient, a white boy fourteen years of age, was admitted to the Finley Hospital March 28,

1941, because of "pain in the left ear with drainage of pus, fever and nausea."

*Family History:* Irrelevant.

*Past History:* Not recorded.

*Present Illness:* Two weeks before admission the patient developed irregular attacks of pain in the left ear and nine days ago (March 19, 1941) the left ear drum ruptured. When seen that day he had a temperature of 99 degrees, the ear was draining freely, the ear drum was boggy and there was drooping of the posterior canal wall. There was no mastoid tenderness but mastoiditis was suspected and the parents were told that an operation might be necessary. He was next seen five days later (March 24) when the drainage was much less and the drum looked better. A mastoiditis was still suspected. An x-ray examination was made and reported as negative. The ear continued to drain profusely but three days later the patient felt normal and there was no pain in the left ear. Early on the day of admission (March 28) the right ear, previously normal, began to pain but was negative on examination. However, since the patient was nauseated, had a fever and appeared very pale and sick, he was advised to enter the hospital.

*Physical Examination:* The patient's temperature was 104 degrees, the pulse was 120 and the respirations were 26 per minute. Aside from pallor the general examination was essentially negative. Locally there was definite rigidity of the neck and the left ear was discharging freely. No mastoid tenderness or swelling could be made out.

*Provisional Diagnosis:* Left otitis media with meningitis and a question of mastoiditis.

*Course in Hospital:* A white blood cell count was 17,800 with 89 per cent polymorphonuclear leukocytes. The spinal fluid was cloudy and under increased pressure. The cell count was 4,550 per cubic centimeter with 60 per cent neutrophils and 40 per cent lymphocytes, but no organisms were found in several smears. Cultures showed Type I pneumococcus. Three 7.5 grain tablets of sulfapyridine were given by mouth every four hours and then increased to four tablets. This was followed by an emesis, and subsequently vomiting was troublesome. Twenty-one grains of sodium sulfapyridine were then given by rectum every three hours. Fifty thousand units of Type I antipneumococcus serum and a blood transfusion of 400 cubic centimeters were also given. The blood sulfapyridine concentration was maintained between three and five milligrams per 100 cubic centimeters in spite of the vomiting, and at no time was there evidence of blood damage or renal irritation. There was general and progressive improvement as indicated by

the falling temperature, clearer mentality, less drainage from the ear and improvement in the spinal fluid as shown by the following cell counts on different days; admission 4,550; second day, 750; third day, 305; seventh day, 110; and tenth day, 113. On the third day 90 per cent of the cells were lymphocytes and later they were 100 per cent. On the second day paralysis of the right (opposite side to the infected ear) external rectus muscle developed (Gradenigo's syndrome) but the pupils reacted normally. There was also double vision and slight edema of the head of the right optic nerve. The persistent vomiting was difficult to control and for a time it was a question whether this was due to the drug, the meningitis, or to a brain abscess which the rectus paralysis seemed to indicate. However, the rectus paralysis disappeared in three days and the papilledema of the right nerve head also gradually disappeared. The temperature fell progressively and reached normal on the fifth day in the hospital. Subsequently it remained normal except for an occasional rise to 99.2 degrees. The papilledema cleared up in four days. On the seventh day the left ear drum was still bulgy but the right ear was negative. An x-ray examination showed some destruction of the cells in the posterior tip of the left mastoid, some cloudiness in the region of the antrum and density of the tip of the left petrous bone, suggesting petrositis. Because it was considered advisable to defer the mastoid operation until the patient was entirely recovered from the effects of the meningitis, he was allowed to go home on the fourteenth day (April 12). He was to report to the office and was instructed to continue the sulfapyridine (five 7.5 grain tablets a day) at home.

*Readmission (April 18):* The patient was seen on the fifth day after leaving the hospital and seemed in good condition. The white blood count was 9,000. That night he developed pain in the left leg and later in various other joints. The following day he lost his appetite and vomited some soup he had taken. He then developed a fever, perspired freely and seemed very ill. He was advised to return to the hospital.

*Physical Examination:* The patient's temperature was 103 degrees, the pulse was 140 and the respirations were 28 per minute. The left knee and right wrist were red and swollen. No evidence of endocarditis could be detected but a blood culture was taken. A spinal puncture was also made. The spinal fluid was under normal tension and appeared clear. The cell count was 16 lymphocytes per cubic centimeter. Cultures of the spinal fluid and of the blood remained sterile. The white blood count was 17,900. Films of the



left mastoid showed more cell destruction than on the previous examination. The petrous tip appeared the same as before.

*Operative Notes:* It was decided to operate on the fifth day in the hospital and following are the operative notes: "Anesthetic: Nembutal 1.5 grains at 8:00 a. m.; avertin 6.1 cubic centimeters at 9:30 a. m. and light nitrous oxide and oxygen during the operation. The cells in the region of the antrum are nearly normal. There is free pus over the lateral sinus and around the emissary. In these areas the bone is very soft. The sinus and a considerable area of the cerebellum posterior to it are uncovered. The lateral sinus is of good color and the emissary bleeds freely. The bleeding is stopped by pressure and Horsley's wax. The cavity is filled with powdered sulfapyridine and the wound closed except for a small drainage tube at the tip. The dura was not uncovered over the middle fossa. The operation ended at 12:05 p. m. with the patient in good condition."

*Postoperative Course:* The immediate postoperative course was uneventful and the temperature remained at normal or below. The only unusual feature was fluctuation of the pulse between 80 and 100 but no evidence of endocarditis could be detected. The joint symptoms subsided rapidly and the patient was discharged on the sixteenth day. He has remained well up to the present time (June 15) and apparently is cured.

#### DISCUSSION BY DR. MCNAMARA

Pneumococcus meningitis is more common than generally supposed. Rhoads and his associates<sup>1</sup> working at the Cook County Hospital, Chicago, found 71 cases in six series of 459 cases of all types of meningitis between January 1, 1937, and February 1, 1940. Neal<sup>2</sup> has also reported a series of 30 cases since sulfapyridine became available. In our series of 750 necropsies there were seventeen cases of meningitis and eight of them were caused by the pneumococcus.

The symptomatology of meningitis is too well known to require review but the need for alertness in making an early diagnosis of meningeal involvement in cases of head injury, otitis, mastoiditis, sinusitis or pneumonia should be mentioned. Since the beneficial effects of chemotherapy and specific serum depend to a large degree upon early administration, it is imperative that every effort should be made to establish an etiologic diagnosis as quickly as possible.

The treatment according to Neal consists of the oral administration of four to eight grams of sulfapyridine daily to adults; four to six grams to children over three years of age and two to four

grams to younger children. When not tolerated by mouth, an emulsion of the drug with sodium bicarbonate and acacia may be given by rectum. In our case sodium sulfapyridine in distilled water was given by rectum without ill effects. Neal also gives a two per cent solution of sodium sulfapyridine intraspinally, administering thirteen to fifteen cubic centimeters after each spinal drainage. She also believes that the drug should be given intravenously, although at the time of her report she had done so in only one case. In addition to the above therapy, specific antipneumococcus serum should be given intravenously in doses of 100,000 to 300,000 units or intraspinally in doses of 10,000 to 20,000 units. Finally Neal emphasizes the need for the surgical eradication of foci of infection such as occur in the ear, mastoid, sphenoid sinus or ethmoid cells.

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#### NEISSERIAN SOCIETY ANNOUNCES PRIZE

The American Neisserian Medical Society announces an annual prize of one hundred dollars, to be known as the P. S. Pelouze Award, to be presented to the person under thirty-five years of age who, in the opinion of the Committee of Awards, has made the outstanding contribution to the control of the gonococcal infections during the preceding year.

Nominations for the award should be sent to the Secretary, Dr. Oscar F. Cox, 475 Commonwealth Avenue, Boston, Massachusetts, not later than March 31 of each year. The winner will be announced at the subsequent annual meeting of the Society.

#### INTERNATIONAL COLLEGE OF SURGEONS TO MEET IN MEXICO CITY

Pan-American unity in surgery will be demonstrated when the International College of Surgeons holds its Fourth International Assembly in Mexico City, August 10 to 14, upon the invitation of the Mexican government.

Surgeons from most of the countries of the western hemisphere and from England, Holland, Palestine, Portugal, Switzerland and Turkey will participate. Most of the Pan-American countries are sending official representatives. Sessions will be conducted in both English and Spanish. Especially emphasized on the program will be military surgery and the lessons already learned from the Spanish Civil War, current British campaigns, and civilian experiences during air raids.

# STATE DEPARTMENT OF HEALTH

*Valter Liering*

## Industrial Hygiene Institutes

Under joint sponsorship of the Iowa State Medical Society and the Iowa State Department of Health, five special institutes on Industrial Health were held in various parts of Iowa during June 23 to June 27.

The institutes were designed for the practicing physician, the industrial physician and the industrial manager. Places of meeting were Burlington, Cedar Rapids, Mason City, Sioux City and Des Moines. Subjects and discussion concerned medical problems, industrial hygiene control methods, demonstration of laboratory equipment and medical compensation relationships.

Among out of state speakers were William R. Cubbins, M.D., Chicago, clinical professor of bone and joint surgery, Loyola University School of Medicine; Sumner L. Koch, M.D., Chicago, associate professor of surgery, Northwestern University Medical School; Corey P. McCord, M.D., Detroit, director, Industrial Health Conservancy Laboratories; Henry W. Meyerding, M.D., Rochester, professor of orthopedic surgery, University of Minnesota, College of Medicine and Surgery; H. Winnett Orr, M.D., Lincoln, Nebraska, member, American Academy of Orthopedic Surgeons; and Clarence O. Sappington, M.D., Chicago, executive director, American Conference on Industrial Health.

The State Health Commissioner presided at each of the institutes and over the panel discussion which featured the dinner meeting. Iowa physicians and others who participated in the programs were: Donald C. Conzett, M.D., Dubuque; George M. Crabb, M.D., Mason City; Oliver J. Fay, M.D., Des Moines; Edward H. Files, M.D., Cedar Rapids; Mr. R. J. Fischer, Des Moines, assistant general manager, Northwestern Bell Telephone Company; Mr. A. F. Guillian, Sioux City, Sioux City Service Company; T. Frank Hersch, M.D., Cedar Rapids; Mr. J. F. Hodson, Burlington, superintendent, Iowa Soap Company;

Paul J. Houser, M.S., industrial hygiene engineer, Iowa State Department of Health; Mr. Chester S. Johnson, Cedar Rapids, personnel manager, Quaker Oats Company; Charles A. Katherman, M.D., Sioux City; J. E. Normont, M.D., Clinton, DuPont de Nemours and Company; Arch F. O'Donoghue, M.D., Sioux City; Lewis M. Overton, M.D., Des Moines; Mr. W. H. Patterson, Mason City, superintendent, Lehigh Portland Cement Company; Joseph B. Priestley, M.D., Des Moines; James E. Reeder, M.D., Sioux City; Erwin C. Sage, M.D., Burlington; A. H. Wieters, M.S., Des Moines, director, Division of Public Health Engineering and Industrial Hygiene, Iowa State Department of Health; W. Eugene Wolcott, M.D., Des Moines; and Lee R. Woodward, M.D., Mason City, Iowa.

Plans are under way for another series of Special Institutes on Industrial Health, to be held in some of the other key cities of Iowa later in the year with places and tentative dates as follows:

Council Bluffs	Monday, September 22
Ottumwa	Tuesday, September 23
Waterloo	Wednesday, September 24
Dubuque	Thursday, September 25
Davenport	Tuesday, December 2

### THE THICK BLOOD FILM FOR DIAGNOSIS OF MALARIA

When malarial plasmodia in the blood are small in number, search is facilitated by use of the thick blood smear in preference to the more familiar thin film.

The accompanying illustrations (Figures 1 to 4), obtained through courtesy of protozoologist Justin Andrews, Ph.D., of the Georgia State Department of Health, were received from the office of the Interstate Malaria Survey, 823 Davenport Bank Building, Davenport. The figures show the technic of obtaining a thick blood film. As shown



on the opposite page, a full drop of blood from the finger tip is placed in contact with and near one end of the glass slide. The drop is spread out until it is about the size of a dime, but not larger than a five cent piece.

It is important that the drop be placed near one end of the slide and not near the center. The corner of another slide, a tooth pick or wood applicator may be used to spread out the drop of blood. The blood on the slide should be such that printed type may be read through the wet smear. The slide should be placed with smear side up, protected against access by flies and allowed to dry thoroughly before shipment or delivery to the diagnostic laboratory.

## PREVALENCE OF DISEASE

Disease	June '41	May '41	June '40	Most Cases Reported From
Diphtheria .....	7	8	19	For the State
Scarlet Fever.....	77	109	103	For the State
Typhoid Fever.....	3	6	7	Madison, Scott, Warren
Smallpox .....	12	29	32	Clayton, Dubuque, Pottawattamie
Measles .....	613	765	487	Boone, Black Hawk, Franklin, Woodbury, Wright, Polk, Des Moines
Whooping Cough..	152	199	126	Woodbury, Black Hawk, Webster
Brucellosis .....	19	22	25	For the State
Chickenpox .....	183	316	114	Woodbury, Montgomery, Black Hawk, Webster
German Measles...	11	17	2	For the State
Influenza .....	10	32	2	Boone, Clarke, Polk
Mumps .....	307	749	233	Woodbury, Black Hawk, Mahaska, Des Moines, Marshall
Pneumonia .....	34	56	84	For the State
Polio-myelitis .....	0	1	5	
Tuberculosis .....	47	54	73	For the State
Gonorrhea .....	99	98	111	For the State
Syphilis .....	135	186	168	For the State



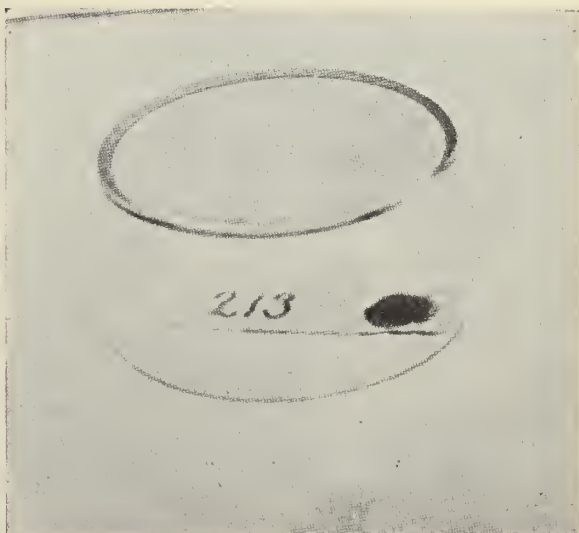
OBTAINING THE BLOOD



STARTING THE BLOOD FILM



THE RIGHT AMOUNT OF BLOOD OBTAINED



SLIDE LYING FLAT AND PROTECTED FROM FLIES

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## THE LOW TOXICITY OF SULFADIAZINE

The rapid progress in the field of chemotherapy makes it difficult for the busy practitioner to keep properly informed concerning new preparations. The new drug, sulfadiazine or 2-sulfanilamidopyrimidine, reported by Roblin in August, 1940, has been subjected to sufficient laboratory study, animal experimentation and human clinical study to warrant its use by the practicing physician.

According to studies by Feinstone, Long, Plummer and Ensworth, and others, sulfadiazine has a wide range of effectiveness. The drug is easily absorbed and high levels of concentration are readily maintained, so much so that frequent determinations of blood concentration are indicated. Little of the drug is present in the blood in the conjugated form. Excretion is somewhat delayed, and it is eliminated almost exclusively in the urine. About one-third of the excreted drug is in the acetylated form, but this acetyl derivative is much more soluble than the acetyl derivatives of sulfapyridine and sulfathiazole. Sulfadiazine passes over into the spinal fluid in concentrations of from two-thirds to four-fifths of those which prevail in the blood.

The particular advantage of sulfadiazine over sulfathiazole or sulfapyridine is its low toxicity. Animal experiments in mice have demonstrated that sulfadiazine is considerably less toxic than the other drugs both in acute experiments and after prolonged administration. Clinical studies have demonstrated the low toxicity of the drug, particularly diminished nausea and vomiting, which have been problems with the other chemotherapeutic agents.

Dingle, Thomas and Morton report thirteen cases of epidemic meningitis treated with sulfadiazine as the only specific agent. One patient died

ten hours after admission; the remaining twelve patients recovered promptly and completely. Nausea, vomiting, dermatitis, cyanosis or mental symptoms were not noted. Two patients developed microscopic hematuria which cleared on cessation of the drug.

Finland, Strauss and Peterson report their experience with the drug in the treatment of 446 adult patients at the Boston City Hospital. The results in the treatment of pneumococcic pneumonia were comparable in every respect with the best results obtained with the use of sulfapyridine or sulfathiazole; there were 19 deaths among 178 patients, a mortality rate of 10.7 per cent. The mortality rate in 138 cases of non-pneumococcic pneumonia treated by sulfadiazine was 21 per cent. In a variety of other conditions, upper respiratory infections, acute urinary tract infections, etc., sulfadiazine appeared to be as effective as sulfapyridine or sulfathiazole. Toxic effects were comparatively rare and mild. Nausea and vomiting occurred in 9.2 per cent, but in no instance were these symptoms severe. Dermatitis was present in only nine patients. Headache and dizziness were noted in only two cases. Microscopic hematuria appeared on three occasions. Leukopenia developed in only nine patients. Anemia and jaundice were not encountered.

The dosage employed in the Boston study consisted of an initial dose of two to four grams, and one gram every four to six hours until the drug was discontinued, three to five days after the temperature was normal. Some of the most critically ill patients were given an initial dose of five grams of sodium sulfadiazine in 100 cubic centimeters or more of normal saline intravenously or in a liter of saline solution subcutaneously. In the majority of patients the recommended dosage results in a blood concentration of six to nine milligrams per 100 cubic centimeters of blood during the first twenty-four hours, and as the dosage is reduced the concentration varies from four to seven milligrams per 100 cubic centimeters of blood.

It is apparent from available studies that sulfadiazine is equally as efficacious as sulfathiazole and sulfapyridine as a chemotherapeutic agent, and that sulfadiazine is much less toxic than the other two compounds. The clinical use of sulfadiazine by the practicing physician seems to be indicated.

## TRANSACTIONS OF THE A. M. A. HOUSE OF DELEGATES

Of importance to every member of organized medicine is the action our officially elected delegates take at their annual national business meeting.

This year at Cleveland Dr. Van Etten in his



presidential address brought into the open one of those cloak-room type of tales which has had considerable circulation, especially since the American Medical Association has been undergoing more or less criticism from various sources. Dr. Van Etten said that for more than twenty-five years he has heard this idle talk to the effect that a small group of persons in Chicago, or sometimes one person, dictated the policy of the American Medical Association. He disposed of the matter at once by stating that if there is any dictating done in American Medicine it is done entirely by the House of Delegates. He urged the members on their return home to take the time and trouble, not only to convince their own constituents who sent them, but also to enlighten public opinion in general of the democratic and altruistic organization of the American Medical Association. Eight years of service on the Board of Trustees have given Dr. Van Etten an opportunity to observe the "meticulous and exhausting patience with which they try in every way to carry out the spirit and the letter of the authorized actions of this House." He went on to say that he had heard Dr. West, Dr. Fishbein and Mr. Braun referred to as a "Triumvirate of Dictators", but he added that he had never heard or seen any of them attempt to originate any policy of the American Medical Association. The JOURNAL believes Dr. Van Etten acted wisely and courageously in speaking of this mildly festering spot in American Medicine. It should be followed up and the blemish healed as rapidly as possible.

Dr. Lahey, also, in his president-elect's address, brought out several commendatory ideas. He deplored the fact that in the past the office of the president of the American Medical Association had so often been a man-killing job. He urged that steps be taken to protect the health of the president while he is in office by all groups being considerate of the demands made upon him. He pointed out that state societies and other medical groups, always seeking to make their meetings as successful as possible, naturally want the top-ranking medical officer to appear before them; but such requests added to the other duties of the president make an almost unbearable burden for the man still engaged in active practice.

Another important fact brought out by Dr. Lahey is one well recognized by all up-and-coming business organizations—the necessity for training a constant supply of young men in the official affairs of the Association who will be qualified by contact and experience to take over the reins when older men are no longer active. State and county societies should have this in mind in selecting their delegates. Dr. Lahey finished his talk with a plea which seems to us to be particularly appropriate.

He urged that we forget the attitude of the government toward organized medicine, with its suit and its threat of invading the medical field, in view of the much larger problem which probably lies ahead of us—war. "Can we have that all-important need in a conflict, national unity? Can we eliminate from our minds what we should like to have for what must be?", asks Dr. Lahey. "If we permit relatively unimportant trivialities to becloud our vision of this all-important problem or if we permit personalities and personal differences to prevent us from giving wholehearted support to our country in this national emergency, we shall properly belong to that group so well described by Sir William Osler, who said 'only to the small is the trivial great,' to which we say, Amen."

Dr. Irvin Abell, Chairman, made a detailed report of the activities of the Committee on Medical Preparedness, which was appointed at the New York meeting one year ago. A few items may be selected for comment. The major task of the Committee was to conduct a survey of the medical personnel of the nation. Over 180,000 questionnaires were sent out, and 150,407 replies had been received up to April 1, 1941. Information returned on the questionnaires has been transferred to punch cards and on April 1, 138,263 such cards had been prepared. Thus there is now on file, or will be shortly, complete and detailed information relative to many phases of our medical personnel, including types of practice and whether physicians are available for military duty or are necessary in their own communities. Apparently this store of information will be utilized by the American Medical Association in making recommendation, upon request, to the War Department whenever vacancies exist which cannot be filled from the Medical Reserve Officers Corps.

The question of maintenance of the supply of physicians in view of the extra demands made by the Army, Navy and Public Health Services, was given considerable attention by Dr. Abell's Committee. This necessity has already been recognized by the War Department. Brigadier-General Lewis B. Hershey issued on May 4 a memorandum to all State Selective Service Directors as follows: "It is of paramount importance that the supply be not only maintained but encouraged to grow, and that no student or interne who gives reasonable promise of becoming an acceptable medical doctor be called to military service before attaining that status." Furthermore, Dr. Abell's Committee in conjunction with the Council on Medical Education and Hospitals prepared a statement for transmission to the Secretary of War and to the Surgeon-General of the Army, recom-

mending that medical students be provided with some form of military status which would indicate that they are rendering "an essential service under the preparedness program and are not seeking to evade, escape or defer their responsibilities." It is to be hoped that the War Department sees fit to act favorably upon this proposal, for the justice of the recommendation is obvious.

Space does not permit of further summarization in these columns of the transactions of the House of Delegates, but we would suggest that our readers look over the report of the Committee on Legislative Activities on page 2783 of the June 21 issue of the *Journal of the American Medical Association*.

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### COMBINED IMMUNIZATION AGAINST TETANUS AND DIPHTHERIA

In spite of the fact that active immunization against tetanus, either alone or in combination with active immunization against diphtheria, has been recommended by various authors, there is still a great deal of skepticism concerning the reliability of the procedure, and in general a failure to adopt this protective measure.

A recent study by Bigler and Werner of the Children's Memorial Hospital in Chicago reports the results of active immunization against tetanus in a group of 240 infants and children. The procedure consisted of a primary or basic immunization by two injections of alum precipitated tetanus toxoid at intervals of three months, comparable in every way to the immunization against diphtheria. In contrast to diphtheria immunization, however, a stimulating or secondary injection of tetanus toxoid is given at the time of any injury which might permit the introduction of tetanus spores. The authors performed repeated determinations of the antitoxin content of the blood after the first, second and the third or stimulating injection. Studies of the antitoxin titer cover a period of two years after the primary immunization.

From the experience gained in this study over a two-year period it is concluded that a stimulating or secondary injection of tetanus toxoid always produced a high titer of tetanus antitoxin which was much superior to that following the prophylactic injection of 1,500 units of antitoxin, both as to the amount and as to the length of time high titers were present in the blood stream. The duration of the immunity to tetanus was as good as the immunity to diphtheria during the period of study. There were no more failures in the tetanus immunization than in the immunization against diphtheria as determined by the antitoxin titer of the

blood. Reactions to injections occur no more frequently in the combined immunization than in the injection of diphtheria toxoid alone. The combined immunization against diphtheria and tetanus is both practical and successful.

The active immunization of children against tetanus should be adopted as a routine procedure, just as immunization against diphtheria is now carried out. Since combined immunization is successful and practical it should replace immunization against diphtheria alone. The impression that immunization against tetanus is still in the experimental stage is erroneous in the light of present knowledge.

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### THE FIFTY YEAR CLUB

The practice of medicine is one of the most difficult professions to which a young man can dedicate his life. The duties are arduous and the responsibilities are heavy. Any man who has survived fifty years of such practice is entitled to the highest respect. He has seen many changes and advances in medical knowledge and the addition of almost two decades to the ordinary life expectancy. He has been a factor in the development of special equipment for the diagnosis and treatment of disease, and has seen a great increase in the physician's armamentarium.

The House of Delegates of the Iowa State Medical Society, meeting in Davenport on May 16, 1941, honored those physicians who have practiced fifty years or more by approving of the formation of a "Fifty Year Club" of which those physicians should be members without payment of dues. Framed letters and pins testifying to their membership have been, or will in the very near future, be presented to these physicians in a public ceremonial. Those who are recorded are as follows:

Watson W. Beam of Rolfe  
George Boody of Independence  
Edward L. Bower of Guthrie Center  
Eric N. Brown of Marengo  
John F. Brubaker of Hubbard  
Andros Carson of Des Moines  
J. Fred Clarke of Fairfield  
Elmer J. Cole of Woodbine  
• Robert R. Davisson of Winterest  
John C. Denison of Bellevue  
Charles C. Fowler of Lovilia  
Samuel T. Gray of Albia  
Benjamin C. Hamilton, Sr., of Jefferson  
Conda C. C. Heady of Bloomfield  
Fred H. Howard of Strawberry Point  
Charles A. Hurd of Northwood  
William Jepson of Sioux City



Frank J. Kriebs of Elkport  
Fred G. Ladd of Cedar Rapids  
Ellis G. Linn of Des Moines  
David N. Loose of Maquoketa  
Arthur P. Maloney of Fonda  
William E. Marsh of Eldora  
Bernard A. Michel of Dubuque  
Harootune A. Minassian of Des Moines  
Charles H. Morse of Eagle Grove  
David T. Nicoll of Mitchellville  
Christian Nysewander of Des Moines  
Norman W. Phillips of Clear Lake  
Wentzle Ruml of Cedar Rapids  
Joseph H. Sams of Clarion  
Walter E. Scott of Adel  
Amos G. Shellito of Independence  
Smith A. Spilman of Ottumwa  
Frank S. Smith of Nevada  
Franklin A. Stevens of Belmond  
Edward F. Strohbahn of Davenport  
Herman J. von Lackum of Dysart  
August F. Walter of Gladbrook  
Fred L. Wells of Des Moines  
Harry E. Woods of Birmingham  
Henry C. Young of Bloomfield

It is possible that there are other physicians in the state who are eligible to membership in the "Fifty Year Club". This list was compiled from reports submitted by county society secretaries. If there are physicians who have practiced fifty years or more whose names are not included in the above list, the central office would appreciate being notified so that it may enroll them without further delay.

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#### MEDICAL AID TO CHINA

In April of this year President Roosevelt established the Chinese Defense Supplies Commission to handle all Chinese government purchases in this country under the terms of the seven billion dollar lend-lease program. Of particular interest to physicians are the efforts of this Commission to provide adequate medical supplies for the Chinese army and citizenry alike.

Dr. Walter B. Cannon, professor of physiology, Harvard Medical School, was appointed chairman of the Medical Division of United China Relief. From Dr. Cannon comes the announcement that Dr. Co Tui, head of the Laboratory of Experimental Surgery at New York University, has accepted an appointment as medical advisor to the Commission. Dr. Tui will coordinate requests for medical needs from medical experts in China, and decide which supplies will meet China's vast needs with the greatest effectiveness.

Money collected during the recent United China Relief campaign totaled \$228,721, and the executive committee of the American Bureau for Medical Aid to China, one of eight relief agencies coordinating their work in the United China Relief campaign, voted the expenditure of this entire sum for immediate shipment of medical and relief supplies to Free China. The American Red Cross has arranged to transport the supplies across the Pacific and up the Burma Road. In addition to furnishing necessary drugs and vaccines, various other projects will be supported; namely, the rehabilitation of disabled and crippled soldiers and civilians, the establishment of the sixth first aid station for air-raid victims in Chungking, and the equipment of the Central Emergency Medical Training School at Kweiyang.

The story of American medical aid to China would be a fascinating one if it were not for the horrible implications which take it from the realm of fancy into that of stark reality. By China Clipper went 5,000 tablets of sulfaguanidine to be used in checking an epidemic of dysentery among an entire army in the field. Reports of the results of this therapy will hold significance for army physicians everywhere.

The Chinese Red Cross Medical Relief Corps is under the direction of Dr. Robert K. S. Lim, who was graduated from the University of Edinburgh, Scotland, and who was serving as professor of physiology at Peiping Union Medical College when hostilities began. Working with woefully inadequate supplies and only a handful of sufficiently trained doctors and nurses, this Medical Corps has performed medical miracles in the face of apparently insurmountable difficulties. Scores of small mobile medical units have been formed, because China's troops were scattered over such a wide territory and all roads and means of communication were destroyed.

One of the most outstanding examples of practical American aid is the story of the epidemic of cholera, which threatened to destroy even more of China's army than had Japanese bullets. In answer to an urgent cable from Dr. Lim 4,000,000 doses of cholera vaccine were sent. Delivery of the full amount was completed in three weeks and the epidemic was checked. As a result, cholera in China last summer was almost non-existent. Since then literally tons of quinine and quantities of atabrine, the new malaria remedy, have been sent from America. One of the United China Relief officials, stressing the importance of continued support and financial aid, says: "It is almost certain that the invader counted on a high casualty rate among the Chinese because of inadequate medical attention, so Dr. Lim's work in caring for

the wounded Chinese soldier, and in sending him back into the fight, is an upsetting factor to the Japanese. . . . The Chinese death rate has been whittled down by other American aid in the form of ambulances, vitamins and trucks for evacuation work. In speeding such help, the United China Relief has done much to sustain Old China long enough for Dr. Lim and others like him to create the new Free China."

Beginning July 1, the American Bureau for Medical Aid to China, through United China Relief, will send \$5,000 a month to China to support Dr. Lim's training schools and orthopedic centers, and to supplement the contributions of the American Red Cross. The Bureau maintains special offices at 1790 Broadway, New York, where American doctors and nurses can apply for service in China. Surgeons, doctors, nurses, pharmacists, ambulance drivers and medical assistants are eligible for serving in the American Relief Corps to China, and the American public in general and the medical profession in particular can be proud of the response which has already been made to this ever-increasing need for humanitarian efforts in the eastern amphitheater of war.

#### NATIONAL GUARD MEDICAL OFFICERS ON ACTIVE DUTY

Following is a list of Iowa medical officers on duty with National Guard units, together with the organization and camp at which they were serving when this report was recently submitted:

ANDERSON, Nevin B., Lieut. Colonel, Des Moines, 113th Cavalry, Camp Bowie, Texas.  
 ANSPACH, Royal S., Major, Mitchellville, 136th Medical Regiment, Camp Claiborne, La.  
 BAKER, Charles J., Captain, Fort Dodge, 136th Medical Regiment, Camp Claiborne, La.  
 BEAUMONT, Fred H., Major, Council Bluffs, 136th Medical Regiment, Camp Claiborne, La.  
 BRINKHOUS, Kenneth M., Captain, Iowa City, 136th Medical Regiment, Camp Claiborne, La.  
 BURDICK, Francis D., 1st Lieut., Shenandoah, 168th Infantry, Camp Claiborne, La.  
 BURGESSON, Floyd M., Captain, Des Moines, 168th Infantry, Camp Claiborne, La.  
 BUSH, Earl B., Colonel, Ames, 136th Medical Regiment, Camp Claiborne, La.  
 CASTELL, John W., Captain, Fairfield, 133d Infantry, Camp Claiborne, La.  
 CONNELL, John R., Jr., Captain, Des Moines, 136th Medical Regiment, Camp Claiborne, La.  
 CONNER, John D., 1st Lieut., Nevada, 136th Medical Regiment, Camp Claiborne, La.  
 CORCORAN, Thomas E., 1st Lieut., Rock Rapids, 136th Medical Regiment, Camp Claiborne, La.  
 DAHL, Harry W., Lieut. Colonel, Des Moines, 168th Infantry, Camp Claiborne, La.  
 DETERS, Donald C., Captain, Schaller, 136th Medical Regiment, Camp Claiborne, La.

ERVIN, Lindsay J., 1st Lieut., Baltimore, Md., 113th Cavalry, Camp Bowie, Texas.  
 FOUNT, Arthur S., Lieut. Colonel, Iowa City, 136th Medical Regiment, Camp Claiborne, La.  
 GITTNER, Ludwig, Major, Fairfield, 133d Infantry, Camp Claiborne, La.  
 HARDIN, Robert C., Captain, Iowa City, 136th Medical Regiment, Camp Claiborne, La.  
 HEALY, Maurice J., Captain, Boone, 185th Field Artillery, Camp Claiborne, La.  
 HOWARD, Bruce F., 1st Lieut., Jewell, 136th Medical Regiment, Camp Claiborne, La.  
 JACOBS, Carl A., 1st Lieut., Iowa City, 136th Medical Regiment, Camp Claiborne, La.  
 JENKINS, George D., Major, Burlington, 136th Medical Regiment, Camp Claiborne, La.  
 JIRSA, Harold O., Captain, Cedar Rapids, 136th Medical Regiment, Camp Claiborne, La.  
 KEITH, John J., Captain, Marion, 136th Medical Regiment, Camp Claiborne, La.  
 KUNTZ, George S., Captain, Sibley, 136th Medical Regiment, Camp Claiborne, La.  
 LOCHER, Robert C., Captain, Cedar Rapids, 136th Medical Regiment, Camp Claiborne, La.  
 LUDWICK, Arthur Lee, Jr., 1st Lieut., Waterloo, 133d Infantry, Camp Claiborne, La.  
 MARTIN, Lowell E., 1st Lieut., Des Moines, 113th Cavalry, Camp Bowie, Texas.  
 MERKEL, Byron M., Captain, Des Moines, State Staff.  
 MEYERS, Henry A., Major, Davenport, 185th Field Artillery, Camp Claiborne, La.  
 MINKEL, Roger M., Captain, Newton, 136th Medical Regiment, Camp Claiborne, La.  
 PARKE, John, Captain, Oakdale, La., 136th Medical Regiment, Camp Claiborne, La.  
 PAULUS, Edward W., Major, Iowa City, 136th Medical Regiment, Camp Claiborne, La.  
 PETERSEN, Vernon W., Major, Iowa City, 136th Medical Regiment, Camp Claiborne, La.  
 PRATT, Elmer B., 1st Lieut., Des Moines, 168th Infantry, Camp Claiborne, La.  
 PRENTISS, Robert J., Captain, Iowa City, 136th Medical Regiment, Camp Claiborne, La.  
 REDMOND, James J., Captain, Cedar Rapids, 136th Medical Regiment, Camp Claiborne, La.  
 SAAR, Jesse L., Jr., 1st Lieut., Iowa City, 136th Medical Regiment, Camp Claiborne, La.  
 SANDERS, Matthew G., Captain, Fort Dodge, 136th Medical Regiment, Camp Claiborne, La.  
 SEDLACEK, Leo B., Captain, Cedar Rapids, 136th Medical Regiment, Camp Claiborne, La.  
 SENFELD, Sidney, 1st Lieut., Belle Plaine, 185th Field Artillery, Camp Claiborne, La.  
 SHEPHERD, Lloyd K., 1st Lieut., Oakville, 136th Medical Regiment, Camp Claiborne, La.  
 SMITH, Rupert G., 1st Lieut., Cedar Falls, 133d Infantry, Camp Claiborne, La.  
 TINLEY, Robert E., Captain, Council Bluffs, Special Troops, 34th Division, Camp Claiborne, La.  
 WOODHOUSE, Keith W., Captain, Cedar Falls, 136th Medical Regiment, Camp Claiborne, La.  
 WURL, Otto A., 1st Lieut., Council Bluffs, Special Troops, 34th Division, Camp Claiborne, La.  
 YETTER, William L., 1st Lieut., Iowa City, 136th Medical Regiment, Camp Claiborne, La.



# SPEAKERS BUREAU ACTIVITIES

## JASPER COUNTY POSTGRADUATE MEDICAL COURSE

The Jasper County Medical Society, in cooperation with the Speakers Bureau, has arranged a series of weekly postgraduate medical lectures to be held at the Skiff Memorial Hospital in Newton each Tuesday evening during the month of November. The schedule is as follows:

- November 4 Diseases of the Blood  
Willis M. Fowler, M.D., Iowa City
- November 11 Diagnosis and Treatment of Pneumonia  
Horace M. Korn, M.D., Iowa City
- November 18 Acute Surgical Conditions in the Abdomen in Childhood  
Frank R. Peterson, M.D., Iowa City
- November 25 The Diagnosis and Treatment of Common Conditions of the Ear, Nose and Throat  
Dean M. Lierle, M.D., Iowa City

The first lecture is to be held the Tuesday following the closing meeting of the Poweshiek County Postgraduate Medical Course, which was announced on the Speakers Bureau page in the May issue of the JOURNAL and which is comprised of four weekly lectures to be held in Grinnell each Tuesday during October. The physicians in these two counties and surrounding territory are urged to reserve Tuesday evenings during October and November and take advantage of this excellent opportunity.

## RADIO SCHEDULE

WSUI—Tuesdays at 8:00 p. m.

WOI—Wednesdays at 2:05 p. m.

August 5- 6 Poliomyelitis

Henry G. Decker, M.D.

August 12-13 Heat Exhaustion and Heat Stroke

Alonzo L. Jenks, M.D.

August 19-20 Group Hospitalization

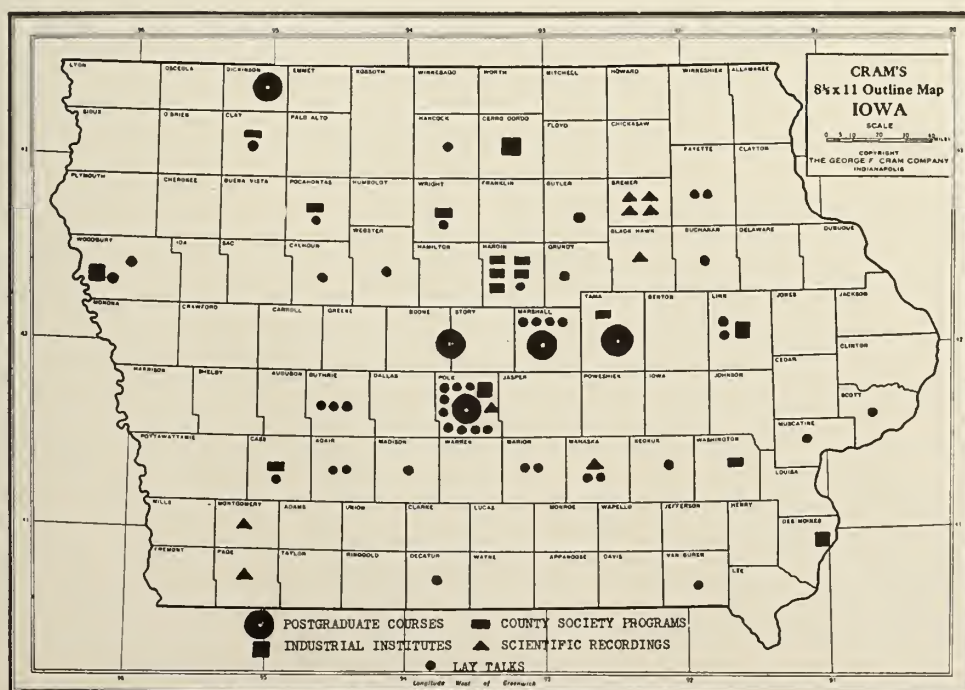
Mr. F. P. G. Lattner

August 26-27 Hay Fever and Asthma

Louis J. Noun, M.D.

## SPEAKERS BUREAU ACTIVITIES FIRST SIX MONTHS OF 1941

On the following map are indicated the Speakers Bureau activities during the first half of this year. You will note that five courses have been or are being given; the Polk County course has been concluded, but the Dickinson, Tama, Marshall and Boone-Story courses are running at the present time. It is interesting to note the increased number of medical talks for lay audiences and also that the number of requests for scientific recordings is gradually increasing. Several fall postgraduate courses already arranged do not appear on this map since it covers only the first six months.



# WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*

5822 North Waterbury Road, Des Moines

*President*—MRS. W. R. HORNADAY, Des Moines

*President Elect*—MRS. F. W. MULSOW, Cedar Rapids

*Secretary*—MRS. M. J. MOES, Dubuque

*Treasurer*—MRS. A. E. MERKEL, Des Moines

## THE PRESIDENT'S MESSAGE

The saying "great privileges beget great responsibilities" never seemed more real to me than it does now as I assume the leadership of the Auxiliary. I deeply appreciate the confidence you have placed in me and am ever mindful of the task that is before me. Our Auxiliary has indeed a dual purpose in that we serve not only the medical profession but mankind in bringing about the greatest of all human assets—Good Health.

As we review the accomplishments of other years and set our goal for the new year let each member ask herself "How much have I done to promote good health and the right feeling toward medicine in my community?" An organization is no stronger than its individual members and growth comes only through individual growth and united effort.

The American people are eager for a knowledge of health problems and we are in a position to see that they secure this information from the proper source. It is necessary, however, if we intend to disseminate facts about medicine and medical practices that we first be informed ourselves. Our program is so designed and is available for you to study and suggest to any lay organization of which you are a member or may come in contact. The need for active participation in civic organizations becomes greater each year for it is through such contacts that we may be most helpful to our community and to our parent body.

The courageous and unselfish efforts of my predecessors have set the standards so high that now since fulfillment rests in my hands I need the support of every member. With your help and the guidance of the Iowa State Medical Society, I feel sure we will experience continued growth.

Mrs. W. R. Hornaday, President

## REPORT OF THE NATIONAL AUXILIARY CONVENTION

Cleveland, Ohio, often called "the busy crossroads of the modern world," was the hostess city for the Nineteenth Annual Session of the American Medical Auxiliary, June 2 to 6. One might have spent the entire time visiting the many places of interest, but with business and committee meetings, luncheons and dinners requiring our attention we could only visit a few. Our first trip took us through the

metropolitan parks and beautiful residential sections to the airport. Here our Auxiliary proved to be very "air-minded" in accepting courtesy flights of the United Air Lines over the city. In fact, so many accepted that late-comers were disappointed when the plane left for the east. A stop at the Lake Shore Hotel and a cup of hot tea was most welcome since the day was very chilly.

We next visited the Cleveland Health Museum, the only one of its kind in America. It was opened in November, 1940, and is under the direction of Dr. Bruno Gebbard, formerly curator of the Health Museum in Dresden, Germany. Wednesday we were guests at the Cleveland Cultural Center and Museum of Art where we enjoyed an organ recital. I have not mentioned the many things we saw en route to these places but all were most interesting and educational.

No convention would be complete without the luncheons and dinners which afford opportunities to meet doctors' wives from every state in the union and also the leaders in the medical profession. The Ohio State Auxiliary entertained the Board of Directors at a formal dinner Monday at the Union Club. The speaker of the evening was Dr. Norman C. Yarian whose hobby is the cultivation of orchids. Never before had we realized that it takes eight years to grow an orchid from the seed to the beautiful flower which we often admire but cannot always afford to wear.

The general luncheons were held in the ballroom of the Hotel Carter and were very well attended. Here we were privileged to see and hear Dr. Nathan B. Van Etten, president of the American Medical Association, and Dr. Frank Lahey, president-elect, each with words of praise and encouragement for the Auxiliary and its efforts. Dr. Morris Fishbein, editor of the *Journal of the American Medical Association* and *Hygeia*, told us of the recommendation of the House of Delegates to encourage research in nutrition; Dr. W. W. Bauer, director of the Bureau of Health Education, spoke regarding his association with our Auxiliary. Last but by no means least was the forceful address given by the Honorable Hatton W. Summers of Texas, chairman of the Judiciary Committee, House of Representatives in Washington, D. C. His portrayal of the dire condition of our country today set everyone thinking—a thing which he maintains the American people have ceased to do



for themselves and allow self-proclaimed supermen to do for them.

Of course the real reason for our attending the convention was the program itself and worthwhile suggestions we might receive from others interested in the Auxiliary work. Our general meetings were held in the ballroom of the Hotel Carter (Auxiliary headquarters) with Mrs. V. E. Holcombe, president, presiding. The reports of the officers, chairmen and state presidents were most encouraging. The final membership total was 27,179, a figure well over the goal set for the year. All these reports were published in the convention number of the *Bulletin*. I am sure every member would enjoy reading them. Our first guest speaker was Miss Etta Creech who spoke on "What Is Sound Health Education?" She said "To manage one's own health satisfactorily is the first real step. Doctors set the rules and make road-maps, it is up to us to follow them." Dr. Helen Hunscher, a home economist, spoke on "Nutrition: Food for Fitness." The addresses of both Mrs. Holcombe and the in-coming president, Mrs. R. E. Mosiman of Seattle, Washington, were splendid contributions to our program. Mrs. Frank Haggard of San Antonio, Texas, was chosen president-elect of the Association.

The Music Hall of the Cleveland Auditorium afforded the setting for the general meeting on Tuesday evening. It was a most dignified occasion. The doctors on the program were in formal attire and nurses in crisp white uniforms served as ushers. Here Dr. Lahey of Boston was installed as president, and Dr. Van Etten received the customary medal as retiring president. Dr. James Ewing of New York, the recipient of American Medicine's highest honor—the distinguished service award—was present and responded briefly to his introduction.

To be a member of the National Board of Directors and to realize that you have a vital part in this great movement makes one's efforts seem very humble; however, Auxiliary has made great strides since its beginning in 1922 and will continue to do so with the support of each member in her own community.

Mrs. W. R. Hornaday

#### UPPER DES MOINES AUXILIARY

The Woman's Auxiliary to the Upper Des Moines Medical Society met at Templar Park, Spirit Lake, July 10, 1941. In the absence of the president, Mrs. F. D. Edington, the meeting was called to order by Mrs. C. E. Birney of Estherville. The minutes of the previous meeting were read and approved. The treasurer reported a balance on hand of \$7.36. A discussion on dues and membership followed.

Mrs. W. R. Hornaday of Des Moines, president of the Iowa State Medical Auxiliary, was a guest of the meeting. She addressed the group, stressing the aims and purposes of the Auxiliary. These she cited as being first, social; second, a means of contact between the medical profession and laymen; and third, the necessity of having at least one health program annually in each auxiliary. A discussion followed

pertaining to the health projects in each community of the Upper Des Moines Auxiliary.

The following officers were elected for the coming year: Mrs. Don F. Rodawig of Spirit Lake, president; Mrs. Paul O. Nelson of Emmetsburg, vice president; Mrs. Andrew I. Reed of Estherville, secretary and treasurer; and ex-committee member from Clay County, Mrs. Elbert E. Munger, Jr., of Spencer.

Mrs. A. I. Reed, Secretary

#### SUBSCRIBE TO THE BULLETIN

The postconvention issue of the *Bulletin* of the Woman's Auxiliary will soon be ready for publication. In addition to interesting convention news it will contain addresses by convention speakers on plans and policies of the Woman's Auxiliary for this year with respect to its usual activities and their relation to national defense. Most important of all it will present the programs of the departments of Hygeia, legislation, program and public relations. These programs will not be sent to you in pamphlet form as heretofore. Therefore, it is necessary for you to send in your subscription to the *Bulletin* at once. The cost is one dollar for one year, and subscriptions should be mailed to Mrs. Charles H. Wernner, circulation manager, 531 North Twenty-fourth Street, St. Joseph, Missouri.

#### SPEAKERS BUREAU RADIO SCHEDULE

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August 5-6 Poliomyelitis

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Alonzo L. Jenks, M.D.

August 19-20 Group Hospitalization

Mr. F. P. G. Lattner

August 26-27 Hay Fever and Asthma

Louis J. Noun, M.D.

#### YOU ARE INVITED

To meet your State Medical Auxiliary

at the

Iowa State Fair, August 20 to 29

in the

Educational Building, Main Floor  
(Grandstand)

Through courtesy of the  
Iowa State Department of Health

## SOCIETY PROCEEDINGS

### Buchanan County

The annual golf and scientific meeting of the Buchanan County Medical Society was held at the Wapsipinicon Golf Club, Friday, July 11. Frank R. Peterson, M.D., of the State University of Iowa, College of Medicine, Iowa City, spoke to the group on Malignant and Benign Conditions of the Large Bowel with special reference to making an early diagnosis. Guests of the society were Dr. E. M. MacEwen of Iowa City and Dr. Felix A. Hennessy of Calmar.

N. L. Hersey, M.D., Secretary

### Dallas-Guthrie Society

The regular meeting of the Dallas-Guthrie Medical Society was held Thursday, July 17, at Woodward. After dinner at the Methodist Church the meeting was held at the State Hospital auditorium where the following program was presented: half-hour musical program by hospital band; The Education and Recreation of Mentally Retarded Children, Miss Jane Hutchinson; presentation of two cases of hydrocephalus and one case of a true hermaphrodite; scientific paper on The Treatment of Acute Laryngotracheobronchitis, Clarence M. Porter, M.D., of Woodward, discussion by Peter W. Beckman, M.D., of Perry.

S. J. Brown, M.D., Secretary

### Hardin County

Ruben Nomland, M.D., professor of dermatology, State University of Iowa, College of Medicine, Iowa City, conducted a skin clinic for members of the Hardin County Medical Society at the regular meeting of that organization held Tuesday, June 24, in Iowa Falls.

W. E. Marsh, M.D., Secretary

### Jackson and Dubuque Counties

The first joint meeting of the Jackson and Dubuque County Medical Societies was held Thursday, June 12. Dinner was served at the Hotel Weck in Bellevue, and the following program was presented in the afternoon at Oak Lodge in the Bellevue State Park; Problems in the Diagnosis and Treatment of Pulmonary Tuberculosis, J. Carl Painter, M.D., superintendent of Sunny Crest Sanatorium, Dubuque; a group of cases with clinical records, x-ray findings and pathologic specimens, F. P. McNamara, M.D., Dubuque, and Henry Edstrom, M.D., Dubuque.

### Poweshiek County

The Poweshiek County Medical Society met Tuesday, June 10, at the Hotel Brooklyn in Brooklyn, at

which time John H. Peck, M.D., superintendent of the State Sanatorium at Oakdale was the speaker.

### Wayne County

Colonel Robert S. Shane, M.D., Des Moines, was the guest speaker of the Wayne County Medical Society, when that group met Tuesday, July 8, in the office of Dr. A. E. Davis of Seymour. Dr. Shane spoke on The Doctor in Selective Service.

### Twin Lakes District Medical Society

The Eighteenth Annual Meeting of the Twin Lakes District Medical Society was held at Rockwell City, Thursday, June 19, with the following program: The Art of Medicine, Roy W. Fouts, M.D., Omaha, Nebraska; Common Diseases of the Mouth, Face and Nose, Gordon B. New, M.D., Rochester, Minnesota; The Action and Uses of the Newer Organic Drugs, Archibald R. McIntyre, M.D., Omaha, Nebraska; Practical Clinic on Allergic Diseases, Charles C. Dennie, M.D., Kansas City, Missouri; Diseases of the Stomach and Cancer, Waltman Walters, M.D., Rochester, Minnesota; Ailments of the Heart, George E. Fahr, M.D., Minneapolis, Minnesota; and The Role of Physicians in Maintaining Health During National Defense, Carl M. Peterson, M.D., Chicago. Officers elected at the business session are: Dr. H. H. Harris of Battle Creek, president; Dr. R. M. Armstrong of Ida Grove, vice president; and Dr. P. W. Van Metre of Rockwell City, secretary and treasurer.

### Upper Des Moines Medical Society

The summer meeting of the Upper Des Moines Medical Society was held at Templar Park Hotel on Spirit Lake, Thursday, July 10. The all-day session began at 9:00 a. m. with the following program: Sound Picture on Studies in Human Fertility, Ortho Products, Inc.; Pathology of the Intestines, Harold W. Morgan, M.D., Mason City; Roentgen Diagnosis of Intestinal Conditions, Allan B. Phillips, M.D., Des Moines; and Medical Preparedness, Roy W. Fouts, M.D., Omaha, Nebraska. The afternoon program was presented as follows after the noon dinner: Common Diseases of the Lower Intestinal Tract, W. D. Paul, M.D., Iowa City; Traumatic Injuries of the Face, John B. Erich, M.D., Rochester; Acute Surgical Conditions in the Abdomen, George H. Scanlon, M.D., Iowa City; Treatment of Nervous Indigestion, Walter C. Alvarez, M.D., Rochester; and Increased Risk of Patient Flying at High Altitude, W. R. Lovelace, M.D., Rochester.



## PERSONAL MENTION

Dr. Aileen E. Mathiasen has become associated with Dr. J. P. Cogley in Council Bluffs, going there directly from Des Moines where she has completed her internship at Mercy Hospital. She was graduated in 1940 from Creighton University School of Medicine, Omaha.

Dr. Robert E. Shaw has closed his office in Clarksville and moved to Iowa City where he will take postgraduate work in obstetrics and pediatrics. After January 1 he will be associated with the Rolfe Memorial Clinic in Waverly. Dr. Edward M. Mark, formerly of Denison, has located in Clarksville.

Dr. Harry P. Smith of the State University of Iowa, College of Medicine, Iowa City, was presented with the Ward Burdick gold medal award in recognition of his research on Vitamin K as a blood-clotting agent. This award is given annually by the American Society of Clinical Pathologists.

Dr. Ernest M. Kersten of Fort Dodge has announced the association of Dr. G. Prentiss McArdle with him in the practice of medicine. Dr. McArdle was graduated in 1940 from Creighton University School of Medicine, Omaha, and completed his internship at St. Catherine's Hospital in Omaha.

Dr. John H. Merrick, after practicing twenty years in Cherokee, has moved to Maxwell, where he will continue in his profession.

Dr. D. W. Todd has arrived in Audubon where he will enter the practice of medicine with Dr. LeRoy E. Jensen. Dr. Todd was graduated in 1940 from the University of Kansas School of Medicine, Lawrence, and served his internship at Broadlawns General Hospital in Des Moines.

Dr. Frank P. McNamara of Dubuque, past president of the Iowa State Medical Society, discussed "Medical Ethics" at a meeting of Iowa school superintendents, principals and teachers, held in Cedar Falls, Thursday, July 24.

Dr. Dudley G. Wiley of Boise, Idaho, has located in Hedrick, and will be associated with Dr. Franklyn C. Perkins in the practice of medicine. Dr. Wiley was graduated in 1939 from the State University of Iowa, College of Medicine, and served his internship at the Deaconess Hospital in Spokane, Washington. For the past year he has been medical officer in the C.C.C. Camp in Boise.

## MARRIAGES

Mrs. Annie Parkhurst of Billings, Montana and Dr. A. E. Wanamaker of Hamburg were married at Billings in the Methodist Church, Wednesday, June

11. This seventy-five year old couple was led to the altar by two great grandchildren of the bride. After the wedding breakfast Dr. and Mrs. Wanamaker boarded a plane for the honeymoon trip home to Hamburg, where Dr. Wanamaker has been practicing medicine for forty-four years.

The marriage of Miss Genevieve Houston of Marshalltown and Dr. Aloysius J. Havlik of Tama took place Saturday, June 21 at St. Patrick's Catholic Church in Dunlap, Iowa, home of the bride's parents. After a wedding trip the couple returned to Tama, where Dr. Havlik has been practicing for the past six years.

Miss Betty Isaacson of Fort Dodge and Dr. James H. Coddington, son of Dr. and Mrs. James K. Coddington of Humboldt, were married Sunday, July 6 at Wraywood near Fort Dodge. The couple left following the ceremony and reception for a trip to Colorado after which they will be at home in Humboldt, where Dr. Coddington is associated with his father in the practice of medicine.

Miss Doris Young of Cedar Rapids was married to Dr. A. Bryce Stearns, formerly of Des Moines, Saturday, July 5, at the Westminster Presbyterian Church in Cedar Rapids. Dr. Stearns is now on the staff of the Fitzsimmons General Hospital in Denver, Colorado, where the couple will live following a trip to Houston and Galveston, Texas.

The marriage of Mary Virginia Jamesson and Dr. William D. Yavorsky, both of Cedar Rapids, took place Friday, July 4, at the Immaculate Conception Church in Cedar Rapids. They left after the wedding breakfast for a western trip and will return to Cedar Rapids. Dr. Yavorsky has been engaged in the private practice of medicine there for the past two years, but he is on active duty as a lieutenant in the United States Navy, and expects to be assigned to a new location soon.

## DEATH NOTICES

Hall, Harry Patrick, Atlantic, aged sixty-seven, died in Wiota July 1, as a result of a stroke which occurred six weeks ago. He was graduated in 1894 from Drake University College of Medicine, Des Moines, and at the time of his death was a member of the Cass County Medical Society.

Russell, Charles R., Keosauqua, aged seventy, died June 21 at the home of his daughter in Des Moines. He was graduated in 1898 from the Keokuk Medical College, and at the time of his death was a life member of the Van Buren County and Iowa State Medical Societies.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. MCCLINTOCK, Iowa City

DR. R. T. LENAGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. HENRY G. LANGWORTHY, Dubuque

## The Medical History of Palo Alto County

*Prepared by*

CLARA ANTOINETTE RASMUSSEN, B.A.

Ruthven, Iowa

### FOREWORD

The purpose of writing the medical history of Palo Alto County is to portray the ideals and worthy achievements of our illustrious men of medicine from pioneer days to the present day of medical progress. The loyal and faithful physicians of Palo Alto County have performed their duties in the spirit of service for humanity which deserves a worthy place in the archives of our country's history.

zens of our county have added the personal touch to the biographical sketches.

Special acknowledgments must be extended to the members of the present County Medical Society for their timely and helpful suggestions. Dr. Jeannette Dean-Throckmorton of the Iowa State Medical Library in Des Moines, the librarian of the Emmetsburg City Library, and the many citizens of Palo Alto County have all given the writer generous assistance for which she is deeply grateful.

The writer wishes to pay special tribute to the three veteran physicians of our county who are soon approaching the golden anniversary of their medical careers; namely: Dr. Herbert Marc Huston of Ruthven; Dr. Edward D. Beatty of Mallard; and Dr. James Warren Woodbridge of Emmetsburg. These noble souls came to our county with a vision they have lived to see realized. Possessing a quiet dignity and a distinct charm that radiate only from those who have lived and seen much of life, each one of these cultured gentlemen of the Old School has been the true source of inspiration and guidance in preparing this medical history.

Good wishes are also extended to the oldest physician of our county, Dr. Th. T. Naae of Graettinger, who has retired from forty years of active practice to spend the sunset days of his life amid his literary achievements. His "Key to Shakespeare," which has been given favorable comments in various parts of this country, has received special recognition at the University of Oslo, Norway.

Man is largely the product of his environment. The physician is no exception to the rule. Each individual reflects the spirit and tempo of the age in which he lives. For this reason it is advisable to divide this historical discourse into three eras of medical progress which correlate with the physi-

PALO ALTO COUNTY  
IOWA



The preparation of this historical narrative has been compiled from various sources. Much study and effort have been expended in careful research among old newspaper files, public records, diaries, obituaries, printed pamphlets, letters and books. Numerous personal interviews with the older citi-



cal development of the county. This order of sequence will be maintained.

1. 1855-1880 (Saddle-Bag Era) or the Period of Settlement.
2. 1880-1910 (Horse and Buggy Era) or the Period of Development.
3. 1910-1941 (Mechanical and Electrical Era) or the Modern Period.

The narrative portion of each era will be followed by a biographical sketch of every physician who emerged from medical school at that particular time. In this respect an attempt will be made to do justice to each individual doctor.

From the time of settlement to the present year, Palo Alto County has been blessed with seventy-five medical men who found opportunities and a zest for living within her fair portals. Here the light-hearted Irish and the practical-minded Scandinavians welcomed the pioneer physicians and made them feel at home. In return for their simple but genuine hospitality the brave "family doctor" administered hope and comfort in times of stress, illness and death. He became the priest-physician, ever ready to make personal sacrifices for his patients. This spirit of service, made without thought of reward either here or hereafter, became the true foundation upon which there has been bequeathed to the later generations of physicians a heritage rich in the ideals of medicine.

Today Palo Alto County is privileged to have fourteen fine progressive physicians in her midst. We take great pride in their training and ability which are equal to the best in the state. Several of them were born and raised in Iowa where they have received their cultural and medical training. Two of them come from medical families. The son of one physician is carrying on the traditions of his illustrious father, thereby contributing nearly sixty-six years of medical service in one community. A pioneer minister has bequeathed a fine surgeon to the profession. The rest of the doctors with equally fine family backgrounds indicate by their names and general character the type of pioneer stock which has contributed much to the building of a great nation. These fine men of the medical profession do not make a pretense of being perfect individuals, but they do attempt to exemplify in their daily lives the principles set forth by the Great Physician. If this historical narrative shall help us to increase our love and respect for the medical profession in general and at the same time perpetuate the memory and worthy achievement of our noble pioneers, it shall then have accomplished its intended mission.

#### PART I. EARLY HISTORY (SADDLE-BAG ERA)

Palo Alto County, the garden spot of Northwest Iowa, possesses a unique history of its own. The hardy pioneers must have marveled at the great handiwork of nature at her best. The many beautiful lakes and streams, together with the rich fertile soil of the rolling prairies, created a region of enchantment that few people could resist. Into this land of promise the pioneer doctors came to seek their fortunes and to find relaxation after a hard day's work amid the beauties of nature. The kindly smile of the Irish and the rugged faith of the Scotch, Scandinavians and Germans gave added strength and encouragement to the "saddle-bag" doctors as they galloped across the wild-looking prairies in answer to the call of the sick.

Named for one of the important victories of the Mexican War, this county began its existence as a part of Fayette County. From 1851 to 1855 it became attached to Polk, Boone and Webster Counties in succession, for elective and judicial purposes. History records a military march across the prairies from Fort Dodge to a new military point in Minnesota. Guided by a small compass the Sixth United States Infantry of the Second Detachment of Company E, comprising nine government trains, followed the course of the Des Moines River and entered the southeast portion of Palo Alto County May 26, 1853. This military expedition consisting of thirty-four soldiers, six citizens and five ladies halted on the west banks of the river near the present vicinity of West Bend. Camping here for a few days, they were greatly impressed with the beauty of this region, and well they might, for they were the first white people to trod upon the virgin soil of Palo Alto County! After a difficult day's march an Indian guide led them to the southwest shores of beautiful Medium Lake, a short distance north from the place that was destined to become one of the most notable Irish settlements in this country. Named for a famed Irish patriot the present city of Emmetsburg emerged as the county seat. From this area later settlements by the Scotch, Scandinavians and Germans were established in other parts of the county.

The pioneer physicians who first practiced in this county made their presence known from 1863 to 1878. Early recollections list ten in number who established their practices here before the era of the railroads. Previous to their coming into this territory the regular physicians had served in the war between the states. Besides practicing medicine many of them followed other vocations such as the ministry, the legal profession, farming interests and political and civic enterprises that

called for leadership and initiative in promoting the growth of the community. With their complete armamentarium in their saddle bags those who were content to serve only the sick were often seen riding horseback by the stars at night. Over the trackless waste of prairie these sturdy men of medicine braved the intense heat of summer, waded through the swollen streams of spring and fall and suffered the cold blasts of winter. Their remedies were few in number and for the most part were prepared by themselves from herbs, roots and bark gathered along the river bank. They had none of the endocrine products, the assayed tinctures or the diagnostic instruments at their command. However, with their rhubarb and calomel, their "pulses" and "purgings," and their faithful bedside technic they saved many a patient from death. Those were the days that tried men's souls, yet these rugged individualists inspired supreme confidence that would startle the most blasé medic of the present day. It can truly be said of them that they came with "a vision to see, faith to believe and courage to do." West Bend, the first white settlement in Palo Alto County, also received the first two pioneer physicians who came to practice in this region, Dr. J. H. Underwood in 1863 and Dr. A. L. Day in 1868.

Dr. Underwood homesteaded an extensive piece of land on the west bank of the Des Moines River. Early records reveal that he had served as an Assistant Surgeon in the Cavalry under the command of General Grant at Little Rock, Arkansas. This versatile physician found time to serve his fellow men in various capacities. In 1865 he held two county offices, one as county superintendent of schools and the other as county coroner. The following year he served as clerk of court. It is rather difficult to imagine how the good doctor kept the records of the county since the county officers at that time were forced to make many adjournments from the cheerless old court house of Paoli to the more comfortable cabins of the settlers. However, Dr. Underwood lived to see the old town of Emmetsburg moved on wheels to its present site where a new brick court house was completed shortly before his death. In the spring of 1880 he suffered a paralytic stroke and passed away in July of that same year. With military honors he was laid to rest at West Bend on the day following the celebration of the Declaration of Independence.

Like his predecessor, Dr. A. L. Day located at West Bend about 1868 upon a homestead near the upper bridge road west of the river. Here he farmed the land and also practiced medicine for nearly ten years. In 1873 Dr. Day moved to Emmetsburg where he practiced and served as county

superintendent of schools at the same time. Examinations and meetings of teachers were held at his office. After having served in this capacity for a few years he left Emmetsburg for Sioux City where he later became an eye, ear, nose and throat specialist.

The most colorful character during the "saddle-bag" era of our county was Dr. J. J. Whitney, the first regular physician to locate at Emmetsburg. This prominent physician and surgeon was a man fitted by culture and ability to do things. A commanding figure on horseback he reminded the people of "the man who founded this country with a hatchet." From his "Recollections of the War of the Rebellion" we find that he was born at Eagle, Wyoming County, New York, June 16, 1830. He attended the Castleton (Vermont) Medical College and the University of Buffalo Medical College, graduating from the latter in 1854. After spending two years in the state of New York he decided to go to Prairie du Chien, Wisconsin. Here he joined the Pike's Peak gold rush in 1859 and remained in Colorado for two years. He returned to Wisconsin where he became Assistant Surgeon of the Eighteenth Wisconsin Volunteers from 1862 to 1865. With the end of the Civil War he again returned to Wisconsin where he resided until 1871 when he decided to locate at Emmetsburg.

Dr. Whitney's coming into Palo Alto County at the same time that Father J. J. Smith (Long John) made his appearance became the turning point in the spiritual and social life of this rugged Irish settlement. From perambulating pulpits the good priest and the doctor dispensed faith, hope and charity in great abundance and set in order many things. By these noble efforts the pioneers received courage and hope to withstand the horrors of the prairie fires, the grasshopper plagues, the severe blizzards and the malarial fevers that took toll of many lives. These simple but kindly folk lived at peace with the Indians. Sleepy Eye, friendly chieftain of the Sioux and his band were frequent visitors who taught them how to hunt and trap in order to gain food, clothing and the small amount of cash which they required. Even Ink-pa-du-tah, leader of the Spirit Lake massacre, spent a number of seasons there in peace and harmony with the settlers.

When the old town of Emmetsburg was moved to its present site, Dr. Whitney, with a vision for the future, proceeded to beautify the new city. He set out the first trees on South Broadway with other citizens following suit by extending the line to the lake. Today this city takes pride in possessing beautiful shade trees that abound in a riot of color during the fall season.



This public-spirited physician had other diversified interests. He became a thorough Democrat and a promoter of the Greenback movement. Several of his articles appeared in the *Palo Alto Reporter* dealing with such subjects as "Robbing of the People" and "Why I Will Not Vote for Grant." Few people did more for the cause of education than did Dr. Whitney. In this particular field he was years ahead of his time. He advocated the modern methods of teaching and did much as president of the school board to raise the requirements for teaching. Together with Father Smith he helped to promote the cause of temperance. He became vice president of the Blue Ribbon Club, one of the six temperance clubs which flourished in Emmetsburg at one time. His home became the center for the advancement of culture. Music and selective readings were encouraged under the direction of the kindly doctor.

In his own profession, Dr. Whitney surpassed the average surgeon for that day. The *Palo Alto Reporter* of 1878 records an amputation incident that created unusual comment. This operation took place at a farm house located on the north shore of Lost Island Lake. With Dr. McAllister of Spencer and a Dr. Dodge as assistants, Dr. Whitney amputated the left arm of Mrs. J. A. Anthony. The operation proved successful and the patient lived many years, enjoying good health.

Besides attending the state medical meetings at Des Moines, Dr. Whitney became interested in raising the standards of his profession. Irregular physicians and quacks arrived here in great numbers. "Quackery rides triumphant and the public loves to be humbugged," said an editorial of that day. Together with Dr. Henry Perkins, Dr. Whitney attended a medical gathering at Cherokee where they helped to organize the Northwestern Iowa Medical Association comprising twelve counties including Palo Alto County, August 7, 1878. Meetings were held quarterly in the various county seat towns in this part of the state.

The community having witnessed a new influx of settlers and a rising tide of prosperity about 1880, Dr. Whitney decided to trek westward into new and unsettled regions of the frontier. He left Emmetsburg in the spring of 1883 for the Dakota Territory, where he settled at Fort Pierre across from present Pierre. He lived for a few years at Rapid City, South Dakota, but in 1887 he returned to Fort Pierre where he died October 5, 1890. His remains repose in an almost forgotten cemetery near Fort Pierre. A rambling diary spotted with water stains has been found by those who are interested in the pioneer history of South Dakota. It is assumed that Dr. Whitney devoted

his last years to reviewing the incidents of a well-rounded life. His book entitled "Recollections of the War of the Rebellion" was not published until 1902. Thus ends the life of a pioneer physician whose worthy achievements blazed the trail for medical progress.

The medical register of 1876 lists two physicians other than Dr. Whitney who practiced near Emmetsburg at that time. Dr. C. A. Hoffman left no record, save his name. The other physician, Dr. T. C. McMurtrie, was graduated from the Rush Medical College, Chicago, 1863. His stay in this county must have been a brief one for no recollections have been made concerning his practice here.

Dr. G. M. Ellis, a homeopathic physician, came from Floyd County to Emmetsburg during January of 1876, having served as a nurse in a hospital during the Civil War. While in this work he became interested in the practice of medicine. It is not known from what medical school he received his training. His good looks and fine personality appealed to the people of Emmetsburg. His flair for fashionable dress and dashing horses made him popular throughout the county. For a few years he served as county coroner. He was an active Mason, a staunch Republican and an Episcopalian. Enjoying a wide practice he became prosperous, and made several visits in the southern states. Finally in the late nineties he left for Oklahoma where he lived to the ripe old age of nearly ninety years.

During the same year that Dr. Ellis came to Emmetsburg, Dr. J. M. Weld, a regular physician from Kellogg, Iowa, also established a practice here. His professional card introduced him as a lung and throat specialist. In 1877 he left Emmetsburg for his home town at Kellogg.

Dr. C. Henry Perkins located at Emmetsburg in August of 1878. A regular physician, he was graduated from the Jefferson Medical School, Philadelphia, Pennsylvania, in 1877. For a few years he was associated in practice with Dr. J. J. Whitney. In 1879 he purchased a half-interest in the *Pilot*, a newspaper that was the forerunner of the present *Democrat*. Together with Dr. Whitney he helped to organize the Northwestern Iowa Medical Association at Cherokee. In 1880 he gave assistance in compiling the publication of the State Medical Directory. During that same year he also served as county superintendent of schools but his many duties forced him to leave the major part of this work to his deputy. In 1881 he moved from Emmetsburg to his old home at Dodgeville, Wisconsin.

(To be continued next month)

# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

- PLAGUE ON US—By Geddes Smith, The Commonwealth Fund, 41 East 57th Street, New York, N. Y. Price, \$3.00.
- SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY—By Forrest R. Davison, M.Sc., Ph.D., assistant professor of pharmacology, School of Medicine, University of Arkansas. The C. V. Mosby Company, St. Louis, 1940. Price, \$5.00.
- THE 1940 YEAR BOOK OF PEDIATRICS—Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1941. Price, \$2.50.
- BACILLARY AND RICKETTSIAL INFECTIONS—By William H. Holmes, M.D., professor of medicine, Northwestern University Medical School. The Macmillan Company, New York, 1940. Price, \$6.00.
- METHODS OF TREATMENT—By Logan Clendening, M.D., and Edward H. Hashinger, M.D., medical department of the University of Kansas. Seventh edition. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.
- PHYSICAL DIAGNOSIS—By Ralph H. Major, M.D., professor of medicine, University of Kansas. Second edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price \$5.00.
- VITAMIN THERAPY IN GENERAL PRACTICE—By Edgar S. Gordon, M.D., associate in medicine, and Elmer L. Severinghaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1940. Price, \$2.75.

- TECHNIC OF CONTRACEPTION CONTROL—By Robert L. Dickinson, M.D., and W. E. Morris, M.D. The Williams and Wilkins Company, Baltimore, 1941. Price, fifty cents.
- THE 1940 YEAR BOOK OF GENERAL THERAPEUTICS—Edited by Oscar W. Bethea, M.D., professor of clinical medicine, Tulane University School of Medicine. The Year Book Publishers, Chicago, 1941. Price, \$2.50.
- PROCTOLOGY FOR THE GENERAL PRACTITIONER—By Frederick D. Smith, M.D., formerly associate in proctology, Graduate School of Medicine, University of Pennsylvania. Second revised edition. F. A. Davis Company, Philadelphia, 1941. Price, \$4.50.
- HOW TO PREVENT GOITER—By Israel Bram, M.D., Philadelphia. E. P. Dutton and Company, 300 Fourth Avenue, New York, 1941. Price, \$2.00.
- CLINICAL PELLAGRA—By Seale Harris, M.D., professor emeritus of medicine, University of Alabama. The C. V. Mosby Company, St. Louis, 1941. Price, \$7.00.
- THE DOCTOR AND THE DIFFICULT CHILD—By William Moodie, M.D., Medical Director, London Child Guidance Clinic. The Commonwealth Fund, New York, 1940. Price, \$1.50.
- OFFICE UROLOGY—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1940. Price, \$10.00.

## BOOK REVIEWS

### THE 1940 YEAR BOOK OF GENERAL MEDICINE

Edited by George F. Dick, M.D., J. B. Amberson, Jr., M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1940. Price, \$3.00.

This book, published yearly, continues to place the last-minute views of American investigators before the general practitioner. The various editors offer timely comment on any article which is considered subject to criticism. Because this is the fortieth anniversary edition, the history of the Year Books is set forth in the preface. This preface congratulates the men who have been responsible for the existence and survival of the series.

The section on Infectious Diseases, edited by George F. Dick, M.D., includes articles on oral immunity against scarlet fever, arthritis, influenza, meningitis, rabies, poliomyelitis, tetanus, virus diseases, etc.

The second section, on Diseases of the Chest, edited by J. Burns Amberson, Jr., M.D., has some interesting remarks concerning the tuberculosis campaign. It contains also a stimulating symposium on the physiology and pathology of pneumonia, the recent advances in tuberculosis, and articles on asthma, chest trauma, pleural diseases and new growths of the chest.

George R. Minot, M.D., edits the section on Diseases of the Blood and Blood-Forming Organs and Diseases of the Kidney. The opening paragraph on general considerations is very interesting. Dr. Minot discusses therein the advances in hemolytic,

pernicious and hypochromic anemias. Several articles contain recent knowledge of polycythemia, infectious mononucleosis, leukemoid conditions and leukopenias.

William Stroud, M.D., edits the section on Diseases of the Heart and Blood Vessels, with a special article on the best methods of administration of digitalis. There are many briefs on bacterial endocarditis, hypertension, rheumatic heart disease, lues, coronary heart disease, angina, congestive heart failure and electrocardiography.

The fifth section is devoted to Diseases of the Digestive System and of Metabolism. Dr. George B. Eusterman has a special article on "Carcinoma of the Stomach: A Challenge to the Profession." Articles deal with diseases of the esophagus, stomach, duodenum, pancreas, biliary system and the intestinal tract. Recent analyses of metabolism and nutrition are of much interest.

This book merits the attention of all physicians.  
J. W. C.

### THE 1940 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY

Edited by Joseph B. DeLee, M.D., and J. P. Greenhill, M.D. The Year Book Publishers, Chicago, 1941. Price, \$2.50.

Physicians interested in obstetrics and gynecology are always eager to see the new comments by Dr. DeLee and Dr. Greenhill. Dr. DeLee's criticisms of articles published during the year are especially interesting to the reader since they are so very typical of the doctor himself.

The 1940 edition contains two new features. First



is the anniversary preface which consists of short bibliographies and photographs of the men who have helped in the publication of the year book. The second new feature of this year book is the special article by Dr. DeLee. This article is a brief resumé of Dr. DeLee's observation of fifty years of eclampsia, placenta praevia and cesarean section.

The reviewer highly recommends this book not only for its educational benefits to the reader, but because this year's publication is also recreational.

O. A. E.

### PLAGUE ON US

By Geddes Smith. The Commonwealth Fund, 41 East 57th Street, New York, 1941. Price, \$3.00.

In his foreword, Mr. Smith points out the danger when a layman decides to "meddle with epidemiology" and that he has no particular thesis to prove. He then proceeds to state some interesting facts about the spread of disease from early times to the present.

Under the chapter headings of "Pestilence" and "Past Thinking" the author digs deeply into medical history and recounts some of the high-lights of the periods when medical knowledge consisted of a little information and much superstition. That the proper thing to do, medically speaking, was the result of trial and error rather than reason is well brought out.

The next two chapters deal first with the individual and then with the group. "The Sick Man" is an account of the attack of parasites on man and the effect of that encounter on both. "The Sick Crowd" pictures the effect of disease on the individual as applied to the group. In clear terms we find that the sick individual is the basis of epidemics and that epidemics are present when a group of sick individuals are found in the same place at the same time. In this connection, Smith has done much to explain in understandable words the rather intricate terminology often used in presenting morbidity and mortality statistics.

Control of epidemics is dealt with under the heading of "Defenses." As a means of "control" Smith points out the most certain method, "curing or killing the giver," but recognizes the difficulty involved in the former and the legal obstruction to the latter. Alternate methods of isolation of the "giver" and cutting off communication with him are fully discussed. "Reinforcing the Taker's Resistance" and the limits within which we can protect ourselves against disease furnishes a fitting close to the chapter on the control of epidemics.

If one were to read nothing else in this book, the chapter on "Detective Work" would be worth the price of the book. Under intriguing headings such as "The Case of the Ladylike Oysters" and "The Case of the Sleepy Lobsters" Mr. Smith gives graphic and interesting descriptions of some of the famous epidemics. The most recent is "The Case of the

Plumber's Patchwork," which is an account of the amebic dysentery epidemic of the Chicago World's Fair in 1933.

Lest we become too self-satisfied in the progress we have made in the control of diseases we are warned that we have only scratched the surface and many things are yet to be done, some of which are told in the chapter on "Unfinished Business." As an epilogue Geddes Smith propounds some of the interesting possibilities of epidemiology, closing with this paragraph: "When pestilence falls on the people there is a story to tell. The story of the people who do not fall sick has never been told. Perhaps it is the most important part of epidemiology."

The reviewer has only one criticism. Mr. Geddes Smith takes no credit for the book, admitting that everything is borrowed and seems to feel that had he been a physician instead of a layman, his book would have been more worthwhile. This reader's personal opinion is that anyone, physician or not, who can retell the famous stories of medical history and epidemics in the choice language of Mr. Smith should apologize only if he failed to do so. No matter how many descriptions of these same situations you have read, by all means read this one. It will be a pleasure.

R. M.S.

### MEDICAL NURSING

By Edgar Hull, M.D., clinical professor of medicine, Louisiana State University School of Medicine, New Orleans; Christine Wright, R.N.; and Ann B. Eyl, assistant dietitian, Cook County School of Nursing. F. A. Davis Company, Philadelphia, 1940. Price, \$3.50.

The authors of this book aim to impart to the student nurse an understanding of the principles of general medicine; a considerable portion of the book is devoted to this, and to indications for the medical treatment, nursing care and dietary management of these diseases.

The authors made their contributions more or less independently for the purpose of presenting to the student three different viewpoints of disease although they are inseparable. The book is very comprehensive including basic principles of medical nursing and diseases of the respiratory, cardiovascular, blood and blood-forming organs, digestive, urinary, osseous and muscular, ductless glands and nervous systems, diseases due to emotion, those due to nutritional deficiencies, and allergy, physical and chemical agents, and metabolic and infectious diseases.

The illustrations composed of photographs of patients and reproductions of x-rays are very fine and help to clarify the text material. Throughout the book the authors have emphasized the necessity of correlating the mental and physical needs of the patient.

F. E.S. (R.N.)

## OFFICE UROLOGY

By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1940. Price, \$10.00.

Let the reviewer say at the outset that this book is the most practical volume which has ever been written on this subject, and in his opinion there is nothing in the literature that surpasses it. Starting from the introduction and inclusive to the last chapter, one is impressed with the practicability of the book. Every chapter is replete with much wisdom and information that can be utilized by every progressive physician engaged in the practice of medicine.

The enumeration of all the excellent qualities this treatise possesses would require many paragraphs. Dr. Pelouze is to be congratulated for this important contribution to the field of urology. It merits a place on the library shelf of every physician, whether he is a general practitioner or a specialist in the field of urology.

A. G. F.

## BACILLARY AND RICKETTSIAL INFECTIONS

By William H. Holmes, M.D., professor of medicine, Northwestern University Medical School. The Macmillan Company, New York, 1940. Price, \$6.00.

In the preface to his book, the author urges the study of "medicine as it has slowly evolved" in preference to "education based on the accumulation of unsorted, poorly understood factual data."

Sections and diseases considered which are of special interest to physicians in the midwest, include the Pasteurella infections (plague and tularemia); the rickettsial infections of man (typhus and Rocky Mountain spotted fevers); the brucellar infections (undulant fever); the enteric infections (cholera, typhoid fever, paratyphoid fever and the dysenteries); bacillary intoxications (diphtheria, botulism, tetanus and gas gangrene); hemophilus infections (whooping cough); the mycobacterial diseases (leprosy and tuberculosis); miscellaneous bacillary infections (anthrax, glanders, swine erysipelas and erysipeloid and rat-bite fever).

Seven chapters (over a fourth of the entire book with its 676 pages) are devoted to a discussion of tuberculosis, its history, etiology, pathology; to various forms of the disease, clinical aspects and treatment. Students of medical history will be especially attracted to pages dealing with "The Royal Touch", "The King's Evil", quotation from "Macbeth", quacks and panaceas.

Accurate, careful consideration is given to undulant fever, Rocky Mountain spotted fever and whooping cough, with descriptions by Aretaeus,

Aëtius of Ameda, Ballonius and others. Throughout his excellent book, Dr. Holmes makes good his purpose "to furnish the student with a comprehensive knowledge of the development of medical thought."

C. F. J.

## ELECTROCARDIOGRAPHIC PATTERNS

By Arlie R. Barnes, M.D., The Mayo Clinic, Rochester, Minnesota. Charles C. Thomas, Publisher, Springfield, Illinois, 1940. Price, \$5.00.

This is an excellent monograph. It is clearly written and profusely illustrated. The author has gathered some of his recent important original contributions into a small well-put-up volume under the following chapter headings: the relation of distribution of coronary arteries to acute myocardial infarction; the electrocardiogram in acute myocardial infarction; in predominant ventricular strain; in acute right ventricular strain; in chronic right ventricular strain; and in pericarditis; the effects of certain drugs, metabolic disorders and infections on the electrocardiogram; and some observations relative to precordial leads.

Because of Dr. Barnes' extensive experience and sane clinical judgment, his views on electrocardiographic patterns are valuable to anyone interested in cardiology. Hence this compact book will be welcomed by cardiologists and electrocardiologists.

D. J. G.

## DIETETICS FOR THE CLINICIAN

By Milton A. Bridges, M.D., late assistant professor of clinical medicine, New York Postgraduate Medical School of Columbia University. Fourth edition, thoroughly revised. Lea and Febiger, Philadelphia, 1941. Price, \$10.00.

This book is exactly what the title says it is, a book on dietetics for the clinician.

A discussion of the mechanism, physiology and chemistry of digestion is followed by what is known about the vitamin factors in the diet. One section includes the classification and structure of foods, another the acid base factor in nutrition. Of the most value to the clinician are specific diets for individual diseases arranged alphabetically. Under each disease heading is a brief physiologic and pathologic discussion. In many instances a sample menu is tabulated. A table of the carbohydrate, protein, fat, caloric value, acidity, mineral and vitamin content is included.

This book makes the dry hard subject of diet for the patient much simpler and easier for the physician.

E. B. W.



# The JOURNAL

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### THE MORE COMMON NERVOUS DISEASES OF THE SPINAL CORD\*

ADRIEN VERBRUGGHEN, M.D., Chicago

Your kind invitation to speak to you today was a surprise and an honor. At first the subject matter remained in the background, and I presumed that I should be talking on some subject of very frequent occurrence, such as head injuries. Imagine my surprise when a subject with the wide and intellectual scope of the above was submitted. Imagine, also, my consternation and apprehension when it began to dawn on me that the undertaking was difficult and dangerous. It would be difficult to strike a happy medium between too little and too much academic reasoning; it would be dangerous to become technical without being clear. The subject is really a vast one, since it includes neurology without the head, as one of my confreres put it. Both surgical and non-surgical conditions of the nervous tissue of the cord must be included, but this paper will deal exclusively with the non-surgical conditions of the cord. Only the nervous tissues will be considered, and only those conditions which are most frequently seen. An attempt has been made in Table I to classify these on an easily comprehensible anatomic basis.

All neurologic diagnosis is based on neuro-anatomy, neurophysiology and neuropathology, and if the fundamentals of these foundations of neurology are borne in mind, everything becomes relatively simple. It is especially important to bring out the simplest neuro-anatomy of the cord, and for that purpose the diagram in Figure 1 has been prepared. It represents the principal sensory pathways; it lacks some of the motor pathways, the cerebellar pathways and some of the short tracts. These have been omitted in order to emphasize certain points.

For the purpose of our review, it is sufficient to state that the posterior columns convey muscle sense, or deep sensibility, or position sense, and

some touch fibers; that the pain and temperature fibers cross over near the central canal to the spinothalamic tract of the opposite side along with some of the touch fibers; that the lateral columns are the pyramidal tracts.

TABLE I  
ANATOMIC CLASSIFICATION OF COMMON DISEASES OF THE SPINAL CORD

	White or Grey Matter	Site of Lesion	Disease Entity
Discrete	Grey	Anterior horn	Poliomyelitis
	White	Posterior columns	Tabes
	White	Pyramidal tracts	Spastic paraplegia (rare)
	Grey & Grey	Anterior and posterior horns	Syringomyelia Hematomyelia
Combined	Grey & White	Anterior horn and pyramidal tract	Amyotrophic lateral sclerosis
	White & White	Posterior and lateral columns	Posterolateral sclerosis
Diffuse.....	White	Anywhere	Multiple sclerosis

Referring back to Table I, let us consider some of the lesions from this rather elementary anatomic standpoint. Three diseases resulting in a discrete lesion of the cord are noted. Poliomye-

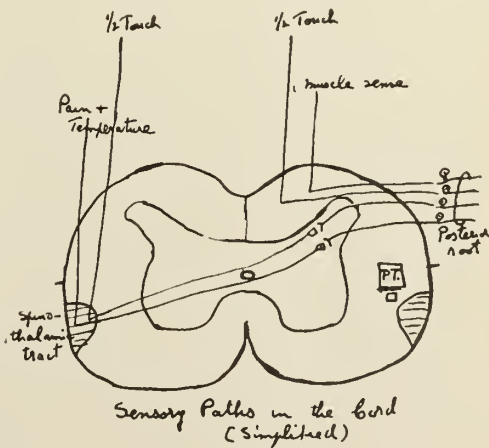


Fig. 1

\*One of a series of postgraduate lectures presented for the Marshall County Medical Society at Marshalltown.

litis is a relatively common acute condition which is fairly well understood, and the discussion of it will be omitted in order to spend time on other things. In the same way, tabes will be dismissed with a few words. Primary spastic paraplegia, or primary lateral sclerosis, is a rare disease, and can be left out for that reason. The principal symptoms of tabes are readily understood when it is stated that there is a degeneration of the afferent fiber of the posterior roots in this disease. Although tabes is a widespread disease of the central nervous system, nevertheless the posterior roots are the most constantly and the most severely affected. The impairment of the sensations of pain, postural sensibility and vibration is seen. Ataxia is evident, because of lack of appreciation of posture and passive movement. Tendon reflexes are lost because the normal reflex arc is interrupted. Bladder disturbances and impotence are also due to interference with essential and primitive reflex arcs.

The discrete lesions of the spinal cord having been passed over, we come now to the combined. In these, two elements of the spinal cord are ultimately involved, but the predominant symptoms and signs at any given time depend on the relative degree of interference of function. Of the four conditions under consideration, multiple sclerosis is the most common, posterolateral sclerosis the next, while syringomyelia and amyotrophic lateral sclerosis are less frequently seen.

#### SYRINGOMYELIA

The pathogenesis of this condition is not clear, and various views have been advanced. Some believe it is a congenital abnormality due to imperfect closure of the central canal, thus relating it to myelodysplasia. There is said to be a familial and hereditary incidence. Others believe that there is an inherent deficiency of glial tissue. Still others believe that the condition is really a slow growing tumor akin to an astrocytoma. Syringomyelia has occurred following trauma. Cavitation has often been described following "concussion" of the cord. In animals, cavitation has been produced both by trauma and by interference with the vascular supply of the cord. In man, the cavities are nearly always in the cervical region of the cord, which, curiously enough, is the region in which the cranial blood supply ends and the purely spinal supply begins. The principal change is a gliosis around the central canal, usually in the lower cervical region. The condition may spread up to the medulla, resulting in syringobulbia. The gliosis frequently breaks down, leading to cyst formation. Large cystic cavities filled with straw-colored fluid are common.

*Symptoms and Signs:* The condition is steadily progressive, and in this respect resembles cord tumor, from which it must be differentiated. The earliest sign is a dissociated anesthesia, that is, all the sensory pathways from the skin are not affected to an equal extent. In syringomyelia, light touch remains intact, but pain and temperature sensations are diminished or absent. I recently saw a patient, a janitor, whose attention was drawn to his hand by the smell of burning flesh; he was holding a red hot pipe to steady himself while painting a basement ceiling. The sensory changes are usually first apparent in the upper extremity because of the predilection of the condition for the cervical cord. The sensory changes



Fig. 2

may be bizarre (See Figure 1). The first motor symptoms may be wasting of the small muscle of the hand, with later weakness throughout the whole extremity. The pyramidal tracts may be compressed, leading to an early spastic paraplegia. As the cavities enlarge healthy cord tissue is compressed in the spinal cord and a spinal block is often found; this is associated with a high protein in the spinal fluid. Trophic disturbances are common, such as Charcot's joints. Painless whitlows, with loss of the terminal portion of the fingers, Morvan's disease, is a form of syringomyelia.

*Differential Diagnosis:* The condition must be differentiated from first, intramedullary tumor, which it may be; second, hematomyelia, which has



a shorter history with a rapid or sudden onset; third, progressive muscular atrophy (from which it must be differentiated by the sensory change and later the spinal block with high protein in the spinal fluid); and fourth, cervical rib; the x-ray picture and the limitation of the disease in this case to the lower trunk of the brachial plexus, as well as the obliteration of the radial pulse on deep inspiration, will help to establish the diagnosis.

*Prognosis:* The disease progresses slowly, but may show remissions. Bulbar symptoms may be terminal as the lesion spreads upward.

*Treatment:* Deep x-ray therapy, while supporting the general health of the patient, is quite satisfactory. The condition may show considerable improvement and pain may be relieved. I have in mind a doctor's mother who has been carried along by this means for several years. However, the tendency of syringomyelia to break down into large cystic cavities, thus compressing healthy nervous tissues in the canal, must be borne in mind. A spinal puncture should be done to determine the presence of a spinal block, and if this is present, operation should be advised to decompress the cord and to open and drain a cystic cavity. I have been in the habit of splitting the fluctuating cord in the mid-line and inserting a drain of Cargile's membrane into the cystic cavity. My janitor, previously mentioned, has remained very well for the last six years on this treatment, plus deep x-ray therapy.

#### AMYOTROPHIC LATERAL SCLEROSIS

The first consideration in this clinical entity is familiarity with its synonyms. Although these are not *strictly* synonyms, in that they may represent phases or variations of what is essentially amyotrophic lateral sclerosis. I stick to the above term for teaching purposes, because it is descriptive and it localizes the lesion. The synonyms are chronic poliomyelitis, progressive muscular atrophy and progressive bulbar palsy. The latter applies particularly when the disease involves the bulb. As some of the synonyms suggest, the disease affects the anterior horn cells of the cord which leads to a progressive muscular atrophy corresponding to the affected segments. Later the disease may also involve the Betz cells in the motor cortex leading to a demyelination of the pyramidal or lateral tracts. (See Table I) The disease is presumed to be due to a toxin with a predilection for anterior horn cells. The first symptoms occur in middle life, from thirty-five to fifty years of age, and it is slowly progressive (See illustration).

*Symptoms and Signs:* Should the hands be

first affected, there is first a gradual weakness and clumsiness, which is followed by wasting. In the lower limbs there is stiffness and cramp-like pains. In the case of a well-known baseball player, he first noticed that he had to adopt a different stance at bat in order to be able to swing his arms and body. However, the muscular weakness and wasting in the hand may precede any other symptoms by many months. Fibrillation, if present, is pathognomonic of a lesion of the anterior horn cell. I have in mind a surgeon who developed weakness and wasting in the right hand without any sensory change, whose scalenus anterior muscle I cut after observing him for several months. Of course, nothing was found in his brachial plexus, and the release of the plexus from any possible pressure on the lower trunk made little difference to the progress of the disease. Three years after the onset in the right hand, the left hand was observed to be weak. Shortly after this, his legs were spastic and he showed an extensor plantar

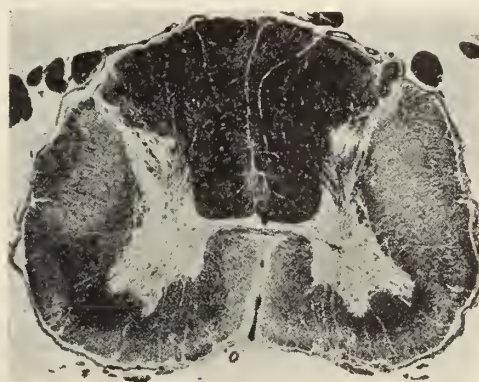


Fig. 3

reflex (Babinski's sign). This occurred when the lateral tracts became involved. Fibrillation was not seen in this patient. So in this disease there is first a lower motor neuron symptom complex, and later there is superimposed an upper motor neuron picture. One may be faced with a peculiar combination of wasting and loss of reflexes in the upper extremities, and with spasticity, exaggerated reflexes and Babinski's sign in the lower extremity. There are few, if any, sensory changes, nor is there any sphincter disturbance.

*Differential Diagnosis:* The condition must be differentiated from first, cervical rib, in which the x-ray picture, the sensory changes and the obliteration of the radial pulse on deep inspiration are usually conclusive; second, syringomyelia, in which the sensory changes are conspicuous and in which there may be spinal block; third, the muscular dystrophies, in which there is a familiar and hered-

itary factor, and in which the wasting occurs in the proximal part of the limb; fourth, tumor of the cord, here sensory changes are never absent, and there are more than likely to be changes in the spinal fluid, spinal fluid block with high total protein; and fifth, lesions of peripheral nerves; in these cases the lesion is limited to a particular peripheral nerve, and although at first an ulnar nerve lesion may be confused with unilateral progressive muscular atrophy, time and the sensory changes in the peripheral nerve lesion will tell the tale.

*Prognosis:* The prognosis is poor, since the lesions are steadily progressive, but remissions may occur so that the ultimate progression is retarded over a period of years.

*Treatment:* Treatment is ineffectual. Vitamin E has received a trial without much success.



Fig. 4

#### POSTEROLATERAL SCLEROSIS

In connection with this clinical entity, it is important to know its synonyms, which are, subacute combined degeneration and ataxic paraplegia. It is a progressive degenerative disease of the spinal cord associated with pernicious anemia. Rare cases have occurred with long continued cachexia and with sprue. The pathologic process is a diffuse symmetrical degeneration affecting the posterior and lateral columns.

The relationship between pernicious anemia and posterolateral sclerosis is a peculiar one, because the nervous symptoms may precede those of the blood dyscrasia. There are cases in which pernicious anemia is well advanced, in which no nervous symptoms develop. In other cases, the degeneration may be marked, while the blood picture is almost normal. The degeneration in the nervous system may continue when pernicious anemia has been cured by liver. Gastric achlorhydria is almost universally present when there is a subacute combined degeneration. The underlying cause is probably associated with Vitamin B dis-

turbances and some intrinsic gastric factor, in which case subacute combined degeneration may be drawn into line with pellagra and lathyrism, and may be regarded as a deficiency disease.

*Symptoms and Signs:* The disease is one of later middle age, from forty-five to fifty years of age. The most common first symptom is a paresthesia in the fingers and toes; this takes the form of numbness and tingling. The peculiar sensation extends proximally along the limb to take on a stocking or glove distribution. Later, weakness and ataxia occur in the lower limbs. A glance at Figure 4 showing the site of the lesions should enable us to predict these things. Position sense is impaired, and there is a superficial sensory loss of glove and stocking type. The weakness and ataxia are more conspicuous in the lower limbs. Rhomberg's sign is present. The ankle jerks are often absent, but may vary, depending on whether the simple reflex arc is affected; the knee jerks are nearly always present and tend to be exaggerated. As the disease progresses, the deep reflexes are exaggerated and Babinski's sign is present. Sooner or later the sphincters are involved leading to urgency and retention. The symptoms of anemia, such as lemon-colored skin, dilation of the heart with murmurs, edema and gastro-intestinal disturbances, may be slight or absent. In some, the clinical picture of pernicious anemia and subacute combined degeneration are both full blown.

*Differential Diagnosis:* This condition must be differentiated from first, multiple sclerosis, in which the nystagmus, the absent abdominal reflexes, the pallor of the optic discs, the age group and the absence of achlorhydria should be sufficient to rule out subacute combined degeneration; second, polyneuritis, this is more difficult because in polyneuritis there may be a glove and stocking anesthesia with absent reflexes, but the pyramidal tracts are never involved, achlorhydria is absent, and the muscles are much more tender; third, cord compression, when this has advanced sufficiently to incapacitate the patient there is usually a sensory level and evidence of spinal block achlorhydria is absent; fourth, tabes, the pupillary reflex, the absence of Babinski's sign, and the Wassermann reaction of the blood or spinal fluid will usually make matters clear; and fifth, Lundy's ascending paralysis.

*Prognosis:* Liver therapy has made a great deal of difference in the outlook for these patients, yet it cannot be stated that it is possible to arrest the disease completely.

*Treatment:* The treatment is liver; liver in fifty-eight different varieties, liver in cocktails, liver in savories, liver in wine, cooked liver, raw



liver, until the patient hates the sight of liver. In addition the achlorhydria should be remedied by giving dilute hydrochloric acid at meals. Oral sepsis and foci of infection should be cleared up. Vitamins A and B should be supplied in abundance.

#### MULTIPLE SCLEROSIS

This is essentially a relapsing disease with patches of demyelination, followed by gliosis. Its synonym is disseminated sclerosis. Ideas vary as to the underlying cause of the condition; some believe it is due to toxins, while others believe an infection is responsible. Even the lowly spirochete has been placed under suspicion. Although the etiology is obscure, there is a very definite and readily recognizable clinical picture.

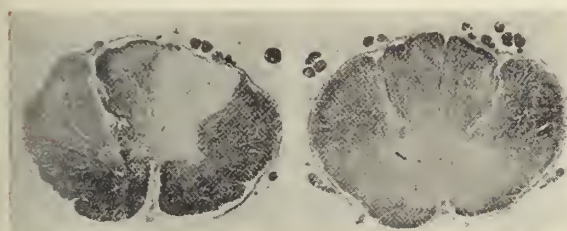


Fig. 5

*Symptoms and Signs:* Young adults are most often affected, ranging in age from twenty to forty years. The first symptom is usually tiredness and a peculiar numbness which begins to spread up the legs. This spreads up rapidly until it may reach the waist. At the same time, weakness and clumsiness of the legs are evident. At this point the numbness may recede, along with all the other symptoms, the whole episode lasting a few days to a few weeks. The patient may then remain well for several months, only to have a return of the symptoms, with more involvement than the first time. There may now be disturbance of vision with spasticity of the lower extremities and tremor and weakness in the upper extremities. On this occasion the symptoms are more severe and stay longer. The classical signs are: paresthesia, weakness and spasticity of the lower limbs, intention tremor, nystagmus, scanning speech, absent abdominal reflexes and pallor of the temporal part of the optic discs.

*Motor Symptoms:* In first attacks and less severe attacks, the motor symptoms are weakness and fatigability. In more severe attacks, spasticity follows, with exaggerated reflexes, clonus and Babinski's sign.

*Sensory Symptoms:* These are always present, but in about half the cases they are definite and

objective. Loss of postural and vibration sense is most frequent, with numbness, formication, and Romberg's sign. Ataxia is common. Incoordination is well seen, also, in the intention tremor, which is often an early sign. I recall a surgical nurse in whom an unexpected clumsiness and intention tremor first called attention to her condition. She managed very well when she first came on duty, but as the hours wore on and she became tired, her clumsiness and tremor were more and more conspicuous.

*Ocular Symptoms:* Nystagmus is most frequently found, and it occurs in about three-quarters of the cases. It is a fine nystagmus both horizontal and vertical. Ocular palsies may lead to diplopia, which may be one of the first symptoms. Retrobulbar neuritis with central scotoma is not rare, and there may even be elevation of the optic discs. In the later stage, pallor of the temporal half of the discs is frequently seen.

In addition there appears to be a certain character complex about these people. They have a very optimistic attitude, which accounts for their feeling of well-being. Between attacks, they usually undertake too much; the men embark on a complicated educational program, while the women usually get married without a worry in the world. When the disease is severe there are sphincter disturbances, and the patient becomes bedridden. The spinal fluid shows a peculiar colloidal gold curve, 5544321000, and, of course, the Wassermann reaction is negative.

*Differential Diagnosis:* The diagnosis is not difficult if a history of remissions is obtained. The conditions must be differentiated from first cerebellar tumor, this may be difficult in the presence of elevation of the discs, but the history, the absent abdominal reflexes, the sensory changes, the spinal fluid examination and the spasticity, as well as the age of the patient, should be helpful; second, posterolateral sclerosis, the age of the patient, the achlorhydria and the absence of cerebral signs assist when this is suspected; third, spinal tumor, the sensory level, spinal block and ocular symptoms will differentiate cord tumor from multiple sclerosis; fourth, tabes must be considered; and fifth, hysteria, these patients are sometimes thought to be hysterical, but this is a very dangerous diagnosis to make.

*Prognosis:* The prognosis is ultimately poor, but many years, fifteen to twenty may elapse before the final reckoning. I have seen many rather elderly people with multiple sclerosis who had had the disease with remissions for many years. Patients become helpless invalids and require complete nursing care.

*Treatment:* In the last few years the treatment of this condition has been somewhat simplified. Fever treatment, either by increasing doses of triple typhoid vaccine, or by fever-producing mechanical apparatus, has been fairly well standardized. I have more experience with vaccine, which has produced fairly good results in general multiple sclerosis and in retrobulbar neuritis. Liver is beneficial. In recent years, the administration of quinine has been given considerable impetus by good reports of its results. Sodium thiosulfate may prove helpful. Probably the most important parts of treatment are rest and time. Time gives a remission an opportunity to appear. A disease with remissions is full of opportunity for charlatans, and needless to say they have not overlooked it.

## THE ETIOLOGY AND TREATMENT OF IRON DEFICIENCY ANEMIAS\*

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From the Department of Internal Medicine, State University of Iowa, College of Medicine

It is well recognized that a deficiency in available iron will cause an anemia of the hypochromic microcytic type. This concept is not new, but recent investigations have focused attention on these anemias and have increased our knowledge of their pathogenesis so that they are now grouped together under the term of iron deficiency anemias. Since the deficiency is one which concerns hemoglobin formation primarily rather than the production of erythrocytes, we find that the lowering of the hemoglobin level is proportionately greater than the lowering of the erythrocyte count. This results in a low color index and hypochromia of the individual erythrocytes. Because of the low hemoglobin component of each cell the erythrocytes are small or microcytic in type. These two features constitute the most important hematologic changes, and although the iron deficiency may be produced in a variety of ways the erythrocytic picture is similar in all cases.

There are many features of iron metabolism which are as yet unsolved, but with our increasing knowledge of the subject we can explain the pathogenesis of the iron deficiency and the resultant anemia in most instances.<sup>1, 2 and 3</sup> The daily iron requirement varies with the age and sex of the individual, but even in the normal adult there is no uniformity of opinion as to the amount required. Estimates range from five to fifteen milli-

grams per day,<sup>4 and 5</sup> but our experimental work in iron metabolism leads us to believe that the higher value is more nearly correct, since subjects who receive a diet containing from three to six milligrams of iron per day were regularly in negative iron balance, whereas these same subjects were in positive iron balance when the dietary intake was increased to twelve or fifteen milligrams per day.<sup>6</sup> The iron is absorbed to a great extent in the upper portion of the small intestine and is excreted almost entirely by the lower bowel. A complete picture of iron metabolism is obscured, however, by the fact that there is no available method by which one can detect that part of the iron which has passed through the gastro-intestinal tract unchanged and that which has been absorbed, utilized and excreted. The urinary iron excretion is small but constant in each individual, and the amount eliminated by this route is not sufficient to play a significant rôle in the production of an iron deficiency.<sup>7</sup>

The gastric acidity is important from the standpoint of absorption of iron and consequently in the production of an iron deficiency. We have shown that a majority of patients with achlorhydria are in negative iron balance even with a normal dietary iron intake and that the average iron balance for a group of achlorhydric subjects is below normal, whereas individuals with a normal gastric acidity on a similar diet retain iron.<sup>8</sup> This has been substantiated by other types of experiments,<sup>9</sup> and clinical reports have repeatedly emphasized the frequency of achlorhydria and hypochlorhydria in hypochromic anemias.

Approximately 4.5 or 5.0 grams of iron are present in the body of a normal adult, and this is apparently present in three forms. First is the iron in the blood hemoglobin which constitutes by far the largest part of the iron content of the body. This accounts for about 2.5 or 3.0 grams of iron. The second is the iron reserve which is available for hemoglobin formation, but the amount of iron in this form cannot be estimated with any degree of accuracy and undoubtedly varies widely, depending upon the age, sex and nutritional state of the individual. It is to be found primarily in the liver, spleen, bone marrow and elsewhere in the reticulo-endothelial tissues, and has been estimated to be about 1.3 grams. A third form of iron is found in the nuclei and cytoplasm of all types of cells and in this state is not available for use in hemoglobin regeneration.

The two factors which have the greatest influence on the iron requirements of an individual are the loss of iron by hemorrhage, and the formation and growth of new iron-containing tissue.

\*Presented before the Ninetieth Annual Session, Iowa State Medical Society, Davenport, May 14, 15 and 16, 1941.



When blood is lost from the body it is obvious that iron is necessary to replace the lost hemoglobin, and if the hemorrhage occurs repeatedly over a long period of time the available reserve supply may become depleted. The loss of blood during menstruation cannot be disregarded in this connection for although the average loss of about 50 cubic centimeters of blood or 19.7 milligrams of iron per period<sup>10</sup> can be readily replaced, this is not true in cases of menorrhagia.

The iron necessary for the growth and development of iron-containing tissues is an important aspect of iron metabolism. It is important during pregnancy, since the fetus at the time of birth contains in the neighborhood of 350 to 400 milligrams of iron,<sup>11</sup> all of which must be obtained from the maternal organism. This represents a severe drain on the maternal reserves,<sup>12</sup> particularly if there are complicating factors. There is also an excessive demand for iron during infancy and childhood when growth is rapid, so that a deficiency may develop if the fetal reserve supply was inadequate at the time of birth or if this supply is not replenished by the dietary intake. The necessity for large amounts of iron continues high during childhood and seems to be particularly great at the time of adolescence and puberty.<sup>13 and 14</sup>

The hypochromic anemia of infancy is prone to develop during the first year of life, frequently making its appearance after the fourth month, when growth is rapid and the demand for iron is particularly great. It is more likely to occur in premature infants, in cases of multiple pregnancies, and in infants born to anemic mothers, in all of whom the iron reserves have not been adequately filled before birth. It may develop in otherwise normal children when their diet is low in its iron content, as with an exclusive milk diet without supplementary feedings. The iron deficiency and the consequent anemia are due primarily to the excessive demand for iron resulting from the rapid growth plus a congenitally inadequate reserve supply or a restricted dietary iron intake.

A common cause for mild grades of anemia in the adult is a long continued low iron diet, but in our experience this alone is seldom the cause of a severe anemia. If complicated by a persistent diarrhea, an achlorhydria, or other factors interfering with iron absorption, a severe anemia may result. It is possible for the low iron diet alone to cause the severe anemia but this is infrequent.

Chlorosis is seldom encountered today in its classical form, although a mild hypochromic anemia is common in girls at the age of puberty.

There is apparently an excessive demand for iron at this age which is probably the result of rapid growth plus the onset of menses. This is not infrequently complicated by a low iron intake as a result of dietary fads and the dislike for certain foods. However, if the diet is adequate and there is no preceding iron deficiency this period of life will be passed without the development of an anemia.

The most common form of iron deficiency anemia is that caused by chronic hemorrhage. This may be encountered at any age and from a wide variety of lesions but is particularly frequent with bleeding hemorrhoids, peptic ulcer or menorrhagia. It is a factor in the anemia associated with carcinoma of the stomach or colon, ulcerative colitis, hookworm infestations, and a great many other conditions in which there is a repeated loss of small amounts of blood over a long period of time. The hemoglobin which is lost is at first replaced with ease, but when the demand is long-continued the available iron becomes exhausted and the production of hemoglobin lags so that the typical hypochromic microcytic anemia develops. In the case of peptic ulcer the depletion of the iron reserves is frequently accentuated by the administration of large amounts of alkalis which interfere with the absorption of iron.<sup>15</sup> Chronic hemorrhage is a factor in a large percentage of the severe forms of iron deficiency anemia, and Rhoads<sup>16</sup> has stated that a microcytic anemia is seldom encountered in the absence of hemorrhage. For this reason, whenever a hypochromic microcytic anemia is found it is necessary to institute a painstaking search for evidence of blood loss.

The hypochromic anemia of pregnancy is the result of several factors.<sup>17</sup> There is the excessive demand for iron by the fetus which acts the same as chronic blood loss in reducing the available iron supply in the mother, but since only a relatively few pregnant women develop this type of anemia, it is obvious that other factors must be present. In many instances there has been an inadequate diet, while in other cases the persistent nausea and vomiting may seriously interfere with the absorption of iron. An achlorhydria or hypochlorhydria is an almost constant feature in the severe grades of hypochromic anemia of pregnancy and, as has been shown, seriously interferes with the absorption of dietary iron. Repeated pregnancies at frequent intervals when associated with low iron absorption are likely to lead to particularly severe grades of anemia.

Idiopathic hypochromic anemia is another example in which there are multiple etiologic fac-

tors.<sup>18</sup> In some cases the onset of the anemia, weakness and pallor may be traced to a pregnancy or repeated pregnancies so that it is merely a continuation of a hypochromic anemia of pregnancy. A low iron diet may be a contributing factor in some cases, but of greater significance is the poor iron absorption resulting from the achlorhydria or hypochlorhydria which is an almost constant feature. The primary etiologic factor in a majority of these cases is the loss of excessive amounts of blood during menstruation, a feature which is frequently unrecognized by the patient. Actual measurement of this blood loss has demonstrated it to be greater than normal in a majority of cases, and the amount of iron so lost was greater than that which was being absorbed from the food.

#### TREATMENT

The essential feature in the treatment of these anemias is the administration of an inorganic iron salt in adequate amounts. The effectiveness of iron has long been recognized, but in recent years the advisability of large doses has been repeatedly emphasized.<sup>19 and 20</sup> This enthusiasm for massive doses of iron has perhaps resulted in the administration of excessive amounts of iron to these patients but has led to excellent therapeutic results. There are numerous iron salts which are effective in the treatment of hypochromic anemia, and those listed below were selected only because they are the ones most commonly used. The dose which is given is that which will produce a maximal response in a majority of adult patients. It is recognized that not all patients will have the same response to identical amounts of an iron salt and that some will respond satisfactorily to smaller doses than those listed, whereas other refractory cases will require even larger amounts.

#### *Dose Metallic iron*

Iron and ammonium citrates. . . . .	6 gm.	1000 mgm.
Reduced iron . . . . .	3 gm.	2800 mgm.
Ferrous carbonate . . . . .	4 gm.	360 mgm.
Ferrous sulfate . . . . .	2 gm.	400 mgm.

When the various iron salts are compared on the basis of their metallic iron content it is found that ferrous are more effective than ferric salts, and Moore<sup>21</sup> has demonstrated that ferrous salts produce the greater increase in blood serum iron. Because of this greater effectiveness, ferrous salts can be given in smaller dosages. The response to adequate amounts of iron in properly selected cases is striking. There is first an increase in the reticulocytes, but the reticulocyte response is slower and less marked than that observed in pernicious anemia with liver extract.

The height of the response is inversely proportional to the hemoglobin level and erythrocyte count at the onset of treatment. Following the reticulocyte rise there is an increase in the hemoglobin and in the erythrocyte count, the rapidity of the rise depending upon the original hemoglobin and erythrocyte level, being more rapid in the severe grades of anemia.

Iron and ammonium citrates are usually administered in the form of 0.5 of a gram (7.5 grains) capsules but may be used in 25 or 50 per cent solution in a suitable vehicle. Reduced iron is usually given in the same sized capsule, while both ferrous carbonate and ferrous sulfate are administered in the form of coated pills. Any of these iron salts when given on an empty stomach may cause gastro-intestinal irritation with nausea, vomiting and diarrhea. For this reason they are best administered either with or immediately after a meal. It has been shown that iron is more effective when given at frequent intervals,<sup>22</sup> so that one should divide the daily dose into three parts, one for each meal, rather than give the entire amount at once. This not only tends to lessen the gastric irritation but increases the effectiveness. The soluble salts are more likely to cause gastro-intestinal upsets than are the insoluble forms, and we have found that reduced iron caused the least irritation and was frequently tolerated by patients who could not take iron in other forms. Ferrous salts, because of their smaller dosage, are frequently well tolerated, but the soluble form, such as the sulfate and chloride, may cause sufficient irritation so that their administration must be discontinued.

It has been demonstrated that achlorhydria interferes with the absorption of dietary iron, but when large amounts of medicinal iron are administered there is apparently adequate absorption in spite of the lack of free hydrochloric acid. Although the hemoglobin response in patients with achlorhydria is slower than in those with a normal acidity, we could not demonstrate that the administration of hydrochloric acid hastened hemoglobin formation, and for this reason do not feel that it is necessary to administer hydrochloric acid when adequate amounts of iron are being given.

It is recognized that copper is active as a catalytic agent and is necessary in the synthesis of hemoglobin even though it does not enter into the hemoglobin molecule itself. In the adult, however, there is sufficient copper in the food and as a contaminant of the iron salts so that additional copper is not necessary. We observed a group of twenty adult patients who were given small daily doses of iron for six weeks and following this



received the same amount of iron plus copper sulfate. The addition of copper did not influence the rapidity of hemoglobin formation.<sup>23</sup>

Whipple and his co-workers have shown the effects of various food-stuffs on hemoglobin formation as well as the effect of liver and liver fractions. The liver fraction which is precipitated by 70 per cent alcohol was found to be effective in treating the anemia resulting from chronic hemorrhage in dogs,<sup>24</sup> and consequently there are many preparations on the market today which combine iron with a liver fraction. In our experience this combination is not necessary since the response to iron alone is satisfactory. In many of the combinations marketed today the amount of iron is too small to be effective unless very large amounts of the preparation are administered, a procedure which adds unnecessarily to the expense of treatment. The combination of iron and vitamins is also in vogue today, but unless there is evidence of a vitamin deficiency this combination has no advantage over a simple iron salt.

Once the hemoglobin has been brought back to a normal level a maintenance dose of iron is required in many cases for an indefinite period, particularly in those patients with idiopathic hypochromic anemia. The amount of iron necessary to maintain a normal hemoglobin will vary from case to case but is considerably smaller than the amount necessary to bring it to that level. The maintenance dose must be determined for each patient by trial and may then be administered continuously or intermittently.

It is useless to speculate on the minimal effective dose of iron in these cases of anemia since this is so variable and, from an economic standpoint, the iron salts are inexpensive. However, during iron balance studies<sup>25</sup> and <sup>26</sup> which were carried out to determine the amount of iron retained from the oral administration of the drug, it was found that the amount retained was far greater than the amount utilized in hemoglobin formation. When three grams of iron and ammonium citrates were given per day, an intake of approximately 500 milligrams of metallic iron, it was found that 167.5 milligrams were retained but only 10.3 milligrams were used in hemoglobin. When one gram of the drug was given daily, 170 milligrams of metallic iron, it was found that 53.7 milligrams were retained, 16.6 milligrams used in hemoglobin, leaving an unused retention of 37.1 milligrams per day. Even this smaller dose would seem to furnish sufficient iron not only for hemoglobin formation but also to replenish the depleted reserves. Because of these findings we undertook a careful clinical trial of smaller amounts of iron

and a satisfactory response was obtained in these patients with doses well below the usually recommended amounts. In the case of iron and ammonium citrates, comparisons were made between groups of patients receiving 0.5 of a gram, 1.0 gram and 3.0 grams of the drug.<sup>27</sup> The response to 0.5 of a gram per day was too small to be satisfactory, but a satisfactory response was obtained with both one gram and three grams per day, the latter producing a more rapid response but one which was no greater nor more prolonged. The usual dose of this drug is six grams per day. Reduced iron gave a satisfactory response with a dosage of only one gram per day; ferrous sulfate, 0.36 of a gram (six grains) per day, was equally effective. These responses to relatively small amounts of iron indicate that the excessive amounts usually employed are not always necessary. It is advisable, however, in severe grades of anemia, in those of long standing, and in those that cannot be followed with frequent hemoglobin determinations, to administer the larger amounts so as to be certain to obtain the maximal response. In many of the others a smaller dose will suffice.

#### SUMMARY

A deficiency in the iron available for hemoglobin formation will lead to the development of a microcytic hypochromic type of anemia. Such a deficiency may be caused by a low iron intake, poor absorption or assimilation of the dietary iron, loss of iron through hemorrhage or by unusually large demands for iron during pregnancy or at periods of rapid growth. In many instances there are combinations of these factors at work.

The treatment of such anemias consists in the administration of adequate amounts of a simple iron salt. It is not necessary to combine the iron with copper, liver extract or vitamins. Although large doses of iron are advisable in severe or long standing cases, there are many patients with mild grades of anemia who respond satisfactorily to much smaller amounts.

#### Discussion

**Dr. Fred Sternagel, West Des Moines:** In 1832 Blaud was treating all anemias with iron; but all anemias are not benefited by iron therapy and in the past much controversy has arisen as to the efficacy of iron in the treatment of anemia. These differences of opinion were a result of the failure to recognize that only certain types of anemia could respond, therapeutically at least, to adequate iron administration. Dr. Fowler has pointed out how we might recognize and treat those types of anemia which we believe today are purely iron deficiency anemias, and has so thoroughly covered the subject from a practical standpoint that nothing much more need be said.

However, a few of the points he has made might be emphasized.

An iron deficiency anemia as we know it today is only a symptom, the contributing cause of which should be sought and found if possible. Approximate hemoglobin determinations can be quickly and easily obtained and should be a part of any routine examination. When a patient's hemoglobin is found to have a value of less than 80 per cent, a thorough investigation is indicated. Even the slightest amount of anemia warrants this investigation because it is difficult to know what secondary effects anemia may have on pathologic conditions present.

Fortunately the greater numbers of anemias encountered in ordinary practice are of the iron deficiency type and will respond to iron therapy if adequate doses are given. Almost any inorganic iron preparation is effective if given in large enough doses and the size of that dose will depend on the chemical state and solubility of the preparation. There is no evidence that one iron preparation is much superior to another and the choice should depend chiefly on the convenience of administration and the individual tolerance of the patient. The oral preparations of iron are so effective and satisfactory in the iron deficiency anemias that there is little reason for giving iron parenterally. There is seldom any indication for giving iron and liver extracts together. If the erythrocyte maturing factor is needed, iron is seldom lacking, and conversely if the iron is indicated the anemia is seldom influenced by liver extract. Only rarely is an anemia due to a deficiency of both iron and the specific principle of liver.

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#### SCAPULA ALATA

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Since Velpeau in 1825 described the first case of alar scapula (winged shoulder blade) due to isolated palsy of the serratus anterior magnus muscle, altogether about 175 cases have been reported in the literature. The majority of the authors regard the deformity as due to a disease or injury of the external respiratory nerve of Bell which supplies the muscle. Among the injuries direct blows upon the shoulder are the most commonly responsible. As far as we can determine three cases have been described in which the paralysis followed a general anesthesia for an abdominal operation.<sup>1, 2 and 3</sup> In another instance<sup>4</sup> the paralysis followed an injury of the long thoracic nerve at an operation for removal of cervical glands. It is remarkable that there are no reported cases of serratus palsy after breast amputation in which the long thoracic nerve is so frequently exposed.

Case 1. C. K., a machinist, fifty-seven years of age, was operated upon for ruptured gastric ulcer on September 9, 1940. (Dr. F.) The day after the operation he complained about pain in his left shoulder and inability to lift his arm. However, since his general condition was critical during the first few days after operation not much attention was paid to this complaint. He returned to work in January of this year and noticed then that he was handicapped by being unable to raise the left arm.

Upon examination of the patient the most prominent symptom was the winging of the left shoulder blade. (Fig. 1) The inferior angle and the vertebral border of the scapula were more prominent than on the other side. When the arms



were elevated this projection became very marked. Also in crossing the arms before the chest the scapula moved away from the chest wall. The neurologic examination revealed anesthesia of the skin of the left shoulder and arm in the area supplied by the fifth and sixth cervical nerves.

Case 2. N. W., a girl eleven years of age, had had infantile paralysis at the age of two. She was first seen two years ago at which time we found paralysis of the right quadriceps muscle and a complete paralysis of the muscles of both calves and the right peronei. Furthermore, there was a paralysis of the right serratus magnus muscle with

paralyzed serratus muscle,<sup>6</sup> suturing of the middle portion of the pectoral muscle to the angle of the scapula,<sup>7</sup> the literature on devices for the con-



Fig. 1. Winged left shoulder blade due to serratus palsy.

the appearance of a winged scapula. (Fig. 2) Since the child was mentally underdeveloped and would not have cooperated after reconstructive surgery in the necessary developing of new muscle function, the treatment was postponed at that time. The child returned recently for a check-up, at which time the findings were about the same as previously with the exception of considerable regaining of strength of the muscles of the right shoulder so that no therapy for the paralyzed serratus muscle is needed.

While several operations for serratus palsy have been devised to restore the normal position of the scapula, such as anchoring the vertebral border of the scapula to the spinous processes of the fourth to seventh cervical muscles,<sup>5</sup> fixation of the vertebral border of the scapula to the opposite ribs,<sup>8</sup> implantation of the subscapular nerve to the



Fig. 2. Winging of the right shoulder blade after infantile paralysis of the serratus magnus muscle.

servative treatment of this condition is scarce. Most authors use massage, electricity and other physiotherapy. Colin Mackenzie<sup>9</sup> suspended the

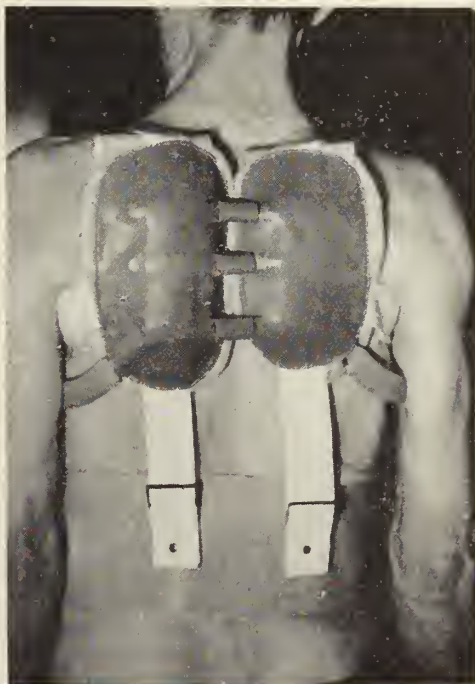


Fig. 3. Brace for serratus palsy. Note the larger and deeper pelot over the paralyzed left scapula.

arm by the wrist with a sling about the neck. Foucar<sup>10</sup> modified this appliance with a "clover leaf sling" encircling the unaffected shoulder, the

neck and wrist of the affected side. Berkheiser and Shapiro<sup>11</sup> used a plaster spica with the upper arm in abduction and external rotation, Fitchet an aeroplane splint. The brace of Horwitz and Tocantins<sup>12</sup> consists of a celluloid bucket for the flexed elbow which is fixed to the trunk by a pelvic rest. However, this brace permits only limited use of the affected arm.

For that reason a new appliance (Fig. 3) was devised consisting of two pelots over both scapulae held in place by steel springs, the lowest of which encircles the chest, brought forward as axillary crutches through the armpits and ending in a spoon placed in the infraclavicular fossa. The pelot for the paralyzed side is larger than the one for the unaffected side and is deep enough to receive the shoulder blade, thereby pressing it against the wall of the chest and, at the same time, preventing its rotation. With this appliance the patient is well satisfied; he can now raise the arm over the horizontal line and can forcefully push his arm forward which is important in his work as machinist in a power house which requires the shifting of heavy switches.

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### CLINICAL AIDS IN THE DIAGNOSIS OF HEART DISEASES IN GENERAL PRACTICE

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Recent developments in the technical equipment have proved to be of great assistance for the cardiologist in his efforts to make his diagnosis as accurate as possible. Modern methods of cardiac diagnosis, such as the electrocardiograph, determination of the venous pressure, the circulation time of the blood, the vital capacity of the lungs, and kymography, serve not only as important

supplements to the traditional heart examination by inspection, palpation, percussion and auscultation, but have to a great extent replaced them. The advantage of this objectivation is obvious. Its disadvantage lies in the fact that all these more or less technical procedures require a special training in both handling the respective instruments as well as understanding the results obtained by their application. The general practitioner, who, for lack of time, often has difficulties even to keep pace with the progress in modern therapeutics, is, therefore, unable frequently to make use of specific cardiologic appliances. On the other hand, the modern aspect of various pathologic conditions of the heart has led to a better understanding and a more accurate evaluation of clinical symptoms which now can serve as important aids for the differential diagnosis.

The following attempt to facilitate differential diagnosis by laying stress on certain clinical symptoms, does not imply that electrocardiography or other means of cardiac diagnosis can easily be dispensed with. There are a number of heart diseases, for the correct diagnosis of which we absolutely need the electrocardiograph, but sometimes the specialist or the physician with the necessary training in evaluating the tracing is not available. In those cases examination with easier accessible methods can sometimes make up for the absence of cardiologic equipment.

#### CARDIAC INSUFFICIENCY

For practical purposes we will distinguish two types of cardiac insufficiency; the muscular insufficiency, which means that the necessary supply of the tissues with oxygen cannot be maintained, and the coronary insufficiency which causes anoxemia of the heart muscle.

One of the earliest symptoms of muscular insufficiency is the diminished vital capacity of the lungs which causes dyspnea on exertion. Ability or inability to do a standardized amount of physical exercise is not an accurate measurement because of the various occupations of our patients. A mail carrier, for instance, will easily be able to climb stairs while an office clerk will already become short of breath, even if their heart muscles are in similar condition. An approximate evaluation of their vital capacity can be obtained if we let them count aloud, after a deep inspiration, at a rate of about one figure every second. We shall find that a middle-aged person will be able to count to about twenty, while a limitation to lower figures will give us a rough estimation of the diminution of the patient's vital capacity.

Another early symptom of beginning decompensation is the venous pressure. Under normal



conditions the cutaneous veins on the back of the hand are filled when the hand is hanging down but they collapse when the hand is elevated above the level of the right auricle. The respective height to which the hand of the patient has to be lifted until the veins collapse allows us to estimate the increase of the venous pressure. If the veins do not collapse, the presence of adhesive pericarditis must be suspected. The easiest method to determine the venous pressure is to connect a glass tube, graduated in millimeters, with an intravenous needle which is introduced in the cubital vein.

An accurate method for determining the presence of, as well as the change in, the amount of cardiac insufficiency is the measurement of the circulation time of the blood. The intravenous injection of magnesium sulfate has proved to be the easiest and most harmless method. Five cubic centimeters of a ten per cent solution of magnesium sulfate are injected in the cubital vein. At the time of the injection a stop-watch is put into motion, and stopped when the patient notices the beginning of a sensation of heat in his mouth (tongue). The normal circulation time is between eleven and fifteen seconds.\*

Coronary insufficiency can be suspected if pains are present on exertion or even when the patient is at rest. The two important diagnostic questions to be answered are: first, is the pain really of cardiac origin; and second, if so, are we dealing with a condition which belongs to the angina pectoris group (effort syndrome, coronary sclerosis, syphilitic aortitis and aortic stenosis), or is the patient suffering from a coronary occlusion with subsequent cardiac infarction. The second question is of greatest importance both for the kind of treatment to be applied and for the prognosis.

In order to confirm or exclude the diagnosis of cardiac pain, we cannot rely on the information which the patient gives us. The popular fear of angina pectoris and its manifestations may unduly influence the patient. More reliable is the nitroglycerin test. One tablet, placed under the tongue, promptly relieves coronary pains while pains of extracardiac origin are not influenced by this drug. This test, of course, need not be tried if another heart disease is diagnosed which may cause cardiac pains, as one of those mentioned above.

The diagnosis of coronary occlusion cannot be made by the character and the duration of the pain alone. We know of a number of cases of certain cardiac infarction where the pain did not

play a prominent part, or was almost absent. If, however, severe pains are present, they cannot be relieved by nitroglycerin and require morphine subcutaneously. Other diagnostic methods which usually distinguish coronary occlusion from angina pectoris are: leukocytosis, increase of the sedimentation rate of the erythrocytes, increase of the body temperature and hyperglycemia, although the latter only occurs a few days after the occlusion has taken place. In regard to the temperature, we often found a difference in the axillary and rectal temperature exceeding the normal of 0.5 of a degree, up to one degree centigrade. This increased difference seems to be independent of the actual height of the temperature and often lasts longer than the increase in the axillary temperature. The hyperglycemia may, but need not, be accompanied by a glycosuria. Lowering of the blood pressure is characteristic of coronary infarction while it is increased during the pain due to angina pectoris; but the blood pressure can only be used as a means of differential diagnosis if it is known under normal conditions, because it varies too much individually, even at given ages.

#### TACHYCARDIA

Five rhythmic disorders must be considered: accumulated extrasystoles, sinus tachycardia, paroxysmal tachycardia, auricular flutter and auricular fibrillation.

Extrasystoles can simulate a tachycardia only if they occur accumulated, and can easily be diagnosed if we listen to the heart sounds for a longer period of time. Then we shall find the normal heart rhythm, interrupted by the frequent extra-beats, but at least for some time the slower regular heart action is found.

Sinus tachycardia seldom exceeds a rate of 130 per minute and usually shows respiratory changes. The rate increases in physical exercise and decreases at rest. There is never a difference in the rate of the radial pulse and the ventricular action, the latter counted by auscultation. Sinus tachycardia occurs normally in children and in nervous persons, in fever, in hyperthyroidism and after physical exercise. We frequently find it in cases of mitral stenosis with sinus rhythm.

Paroxysmal tachycardia is characterized by the sudden beginning and abrupt ending of the attacks. The heart action is strictly rhythmic in most instances, the pulse rate ranges between about 130 and 220 per minute and does not change in or after physical exercise. Signs of cardiac decompensation, such as beginning congestions of the lungs or enlargement of the liver are oc-

\*Neurath, O.: The determination of the circulation time of the blood with magnesium sulphate. *Ztschr. klin. Med.*, cxxxii:134, 1937.

casionaly found, but only if the attacks are of longer duration. Pains similar to those in angina pectoris occur. Typical is the visible pulsation of the carotid arteries independent of the position of the patient. Common complaints on the part of the patient are weakness, choking sensation in the neck and palpitation which is felt in the precordium, epigastrium and neck. The circulation time is shortened. In only a few cases, where the rate exceeds the "critical frequency", thus leading to cardiac insufficiency, do we find a prolonged circulation time.

Auricular flutter shows an auricular tachycardia of between 200 and 400. The ventricular rate, however, is often one-half, one-third or one-fourth of the auricular rate, depending on the refractory time of the bundle. Changes in the conductive ability of the bundle lead to irregular ventricular action. The carotid arteries are not visibly pulsating, but a systolic pulsation of the jugular veins can be seen. Physical exercise leads to a further auriculoventricular block, thus often lowering the ventricular rate for a short time. The same effect can sometimes be accomplished by the carotid-sinus pressure.

The characteristic sign of auricular fibrillation is the absolute arrhythmia, which also distinguishes it from flutter. A pulse deficit is very common due to the weakness of some ventricular contractions which then do not cause a palpable filling of the radial arteries. Seemingly regular ventricular action in fibrillation, so-called eurythmia, changes into virtual arrhythmia during or after physical exercise, but can sometimes be revealed by mere auscultation for a longer time. There may not be any visible pulsation of the vessels of the neck. The blood pressure is usually low.

#### BRADYCARDIA

Both possibilities, virtual bradycardia as well as slow pulse rate with normal ventricular rate, shall be considered. We may have to distinguish between sinus bradycardia, pulsus alternans, regular extrasystole and auriculoventricular block, both partial and complete.

Sinus bradycardia does not show any other signs besides a slow pulse rate and often occurs in perfectly healthy persons. Sometimes it is constitutional and may be inherited. We find it often in sportsmen while they are in training. The rate can be as slow as 50 per minute, sometimes even slower.

Pulsus alternans is due to myocardial weakness. Its characteristic is a decrease in the amplitude of every second pulse which in some cases might escape the palpating finger. Then a bradycardia is

simulated, amounting to one-half the normal rate. It can easily be diagnosed by comparing the radial pulse with the ventricular action.

The same procedure, that of listening to the heart sounds while feeling the radial pulse, reveals the presence of regular extrasystoles. In this case we hear the premature heart beat, which cannot be felt at the radial pulse because of the insufficient diastolic filling of the left ventricle, followed by the compensating pause. In case of bigeminy or trigeminy, palpation of the radial artery alone might suggest slow, regular heart action.

The term partial auriculoventricular block signifies a condition in which the conduction from the auricles to the ventricles is impaired. This may lead either to a prolonged conductive time (P-R interval in the electrocardiogram), which cannot be diagnosed clinically, or to normal conduction of only every second or third auricular systole. In this case virtual bradycardia is present. Since the only clinical expression of the auricular action is the venous pulse, we would have to depend on it in order to reveal the partial auriculoventricular block. Sometimes, however, normal conduction can be established for a short time. Physical exercise re-establishes temporarily normal conduction, as does the parenteral administration of atropine or the inhalation of amyl nitrite in a certain number of cases. The observation of the venous (jugular) pulse is facilitated by placing the patient in a horizontal position.

Complete auriculoventricular block is evident if the conducting connection between auricles and ventricles is entirely interrupted. The auricles are contracting at the normal, or a slightly increased, rate, while the ventricles contract rhythmically at their "proper" slow rate of 40 or less per minute. There is no relation between the rates of the auricles and ventricles, respectively. Evidence of that missing relation and at the same time the correct diagnosis can be obtained by observation of the venous pulse, if visible. Other signs which sometimes can be found are: heaving apex beat, loud, accentuated first sound at the apex, occasionally a systolic murmur and increased systolic blood pressure due to the prolonged diastole and occasionally the recognition of auricular sounds which are best heard near the base, rather on the right than on the left border of the sternum. In complete heart block perfect compensation can be maintained for some time. Therefore, we often do not see any signs of cardiac insufficiency. Physical exercises can be executed without any dyspnea, and the ventricular rate is not increased. Yet this condition is feared because of the pos-



sibility of the Adams-Stokes attacks. These consist of sudden ventricular arrest, followed by pallor, loss of consciousness, arrest of respiration, tonic and clonic spasms, and can, unless the ventricular action can be reactivated, end fatally. Similar attacks can be caused by ventricular fibrillation which is fatal in most of the cases, but the differential diagnosis is only possible by means of the electrocardiograph. Fortunately, ventricular fibrillation is rare; but Adams-Stokes attacks must be reckoned with in all cases of complete heart block.

#### SOUNDS, MURMURS AND THRILLS

Only a short description of the most important auscultation phenomena shall be given. For complete information about all details of modern cardiac diagnosis we refer to the excellent textbooks on cardiology which have been published during recent years. For the purpose of this article, it is practical to give the clinical diagnosis first and to add a short description of the sounds, murmurs and thrills belonging to the respective valvular diseases. It must be emphasized that all features are not present in all cases. This is especially true if we are dealing with a combined valvular disease.

*Mitral Stenosis:* The first sound at the apex is accentuated. In case of normal sinus rhythm, and only then, a presystolic, short "crescendo" murmur can be heard. The second sound is mostly replaced by a "rolling" murmur of longer or shorter duration. If this diastolic murmur is very loud, it can be felt as a thrill. The second pulmonary sound is accentuated, which means it is louder than the second aortic sound. Certain cases do not show any murmurs (so-called "mute" mitral stenosis). However, there is always an accentuation of the first sound at the apex, and often murmurs become apparent when the patient is examined lying on his left side. The blood pressure is usually low.

*Mitral Regurgitation:* Characteristic is a loud, "blowing" systolic murmur at the apex, sometimes felt as a thrill. The second pulmonary sound is accentuated. The character of the systolic murmur is different from the systolic murmurs which are regarded as "accessory" in many other conditions. The presence of a pure mitral regurgitation can be confirmed by the anamnesis, but caution must be used if a murmur is the only sign.

*Aortic Stenosis:* We find a very loud systolic murmur in the second right interspace which is transmitted into the carotid arteries. The second aortic sound is absent. Usually a thrill is felt. The murmur can sometimes be heard also at the

apex, but careful auscultation reveals the presence of the first clear sound at the apex immediately before the murmur, which is much softer there than at the base. The blood pressure is usually, but not invariably, low; the pulse amplitude small.

*Rheumatic Aortic Regurgitation:* In the third left interspace, close by the sternal margin, sometimes over the sternum itself, we hear a soft, "pouring" diastolic murmur, sometimes following an accentuated second sound. The murmur is not so clearly heard in the second right interspace. It sometimes becomes more audible if the patient bends forward. "Waterhammer pulse" (Corrigan pulse) and peripheral pulsations are common.

*Syphilitic Aortic Regurgitation:* Typical of this condition is the "to-and-fro murmur", a systolic and diastolic murmur to be heard in the second right interspace. There is never a thrill and no transmission into the carotid arteries. Auscultation in the third left interspace shows the same two murmurs, but much softer. The other clinical signs of aortic regurgitation, such as low diastolic pressure and peripheral pulsations may be present, their degree being dependent on the extent of the insufficiency of the aortic valves. The "to-and-fro murmur" is so characteristic that it makes the diagnosis very probable, even if the blood reactions for syphilis are negative, which they are in about 20 per cent of the cases.

*Pulmonary Stenosis:* There are always marked cyanosis and a relative increase in the number of the erythrocytes. Auscultation reveals a murmur and a thrill similar to that described in aortic stenosis, but in the second left interspace, and not transmitted into the carotid arteries. The murmur can usually be heard also on the back over the upper thoracic vertebrae and about four fingers' breadth to the left of the spine.

*Tricuspid Lesions:* These occur very rarely alone, usually in combination with mitral lesions. Sometimes a systolic murmur can be heard over the lower part of the sternum. It is easier to diagnose a tricuspid lesion by observing abnormal pulsations.

#### INSPECTION AND PERCUSSION

These two methods of cardiac examination have, to the greatest extent, been replaced by the use of objective instruments. The limitations of "manual" examination as compared with the instrumental are too obvious to evaluate one against the other. Yet, inspection and percussion permit us to draw certain conclusions as to the configuration and relative size of certain parts of the heart. Only the most important facts obtainable by those methods shall be considered.

A strong, or heaving, or enlarged apex beat indicates hypertrophy of the left ventricle. The location of the apex beat outside the nipple (or mid-clavicular) line is a sign of dilatation of the left ventricle. Dulness over the lower third of the sternum is only found if the right ventricle is enlarged or hypertrophied. In case of more pronounced hypertrophy, the lower part of the sternum shows pulsation. Systolic pulsation of the liver (synchronous with the radial pulse) is characteristic of tricuspid insufficiency. Marked pulsation of the vessels of the neck, usually including the ear lobe in the pulsation, is found in aortic insufficiency if the pulsation is arterial, and in tricuspid insufficiency if it is venous. In the absence of a valvular lesion, pulsation of the precordial area is suggestive of an aortic aneurysm. If a pulsation near the apex beat occurs for the first time after a coronary occlusion, the development of a heart aneurysm at the site of the infarction is very probable.

The attempt to determine the size of the heart by means of percussion has been abandoned in favor of the orthodiagram. Yet we can, with some training, roughly determine deviations from the normal configuration. A stretching of the upper part of the left border, due to an outward bulging of the pulmonary conus (not the left auricle, which never forms the left border) is indicative of the mitral configuration of the heart. Broadening of the aortic notch, which forms the uppermost part of the left border, is found in aortic lesions, but is also seen in sclerotic widening of the aortic arch. Enlargement to both sides, especially if forming a triangular shape of the dulness, and no palpable apex beat indicate hydropericardium. In this case the heart sounds are only faintly audible, if at all.

The importance of the venous (jugular) pulse for the diagnosis of heart diseases has been referred to in the headings "tachycardia" and "bradycardia" of this article.

#### CONCLUSIONS AND SUMMARY

Modern methods of cardiac diagnosis require special training so that the physician may avoid errors in the evaluation of the results obtained by the application of the respective instruments. This development of cardiology into a specialty has, on the other hand, brought about a more critical and exact understanding of the significance of clinical symptoms for the diagnosis of heart diseases.

Although in a number of cardiac diseases the electrocardiograph, x-ray and other methods cannot be dispensed with, careful clinical examina-

tion can give valuable aid in the correct diagnosis of cardiac involvement. A consideration of the most commonly occurring cardiac diseases and their outstanding features has been attempted in this article.

## ACUTE LEUKEMIA

### CASE REPORT

DIEDRICH J. HAINES, M.D., Des Moines

The following is a case report of a patient who died from acute leukemia, probably of myelogenous origin.

The patient, Mr. H. M., was a business man sixty-five years of age. His past history and family history were not relevant. In the early summer of 1940 he began to notice that he was losing strength, and he became unduly tired at

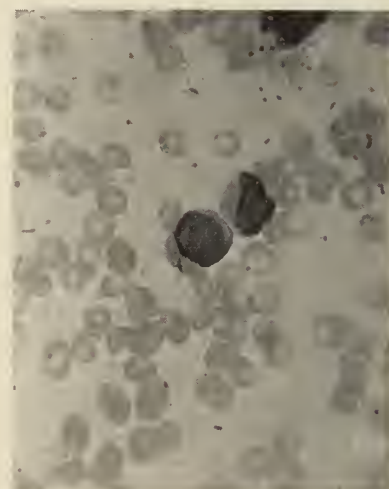


Fig. 1. Two typical myeloblasts from peripheral blood. (Photographed with the aid of L. E. Rosebrook, M.D., and E. A. Benbrook, D.V.M., of Ames, Iowa.)

the end of the day. He consulted a physician who advised him to have several teeth extracted.

On August 17, 1940, a tooth was extracted. Blood oozed from the socket for several days. Necrosis of the gum followed, and the patient had aching pain in the jaw. From this time he failed rapidly; dizziness, shortness of breath on exertion, weakness and fever were most prominent symptoms. Restlessness and insomnia with a general feeling of discomfort and disability appeared; pallor was noticed by the family. The patient lost nineteen pounds, a part of which was due to the pain and difficulty he suffered in eating. The dentist correctly made a diagnosis of leukemia and a blood count was made on August 21. The white blood cells numbered 11,000 and



the red blood cells were 3,700,000. Liver was administered. He continued to fail and was admitted to the Iowa Methodist Hospital on August 30, 1940.

When first seen the patient was acutely ill, with a temperature of 100.2 degrees and obvious weakness and pallor. The physical examination showed a black gangrenous area on the left side of the lower jaw, extending back across the floor of the mouth. The floor of the mouth was infiltrated

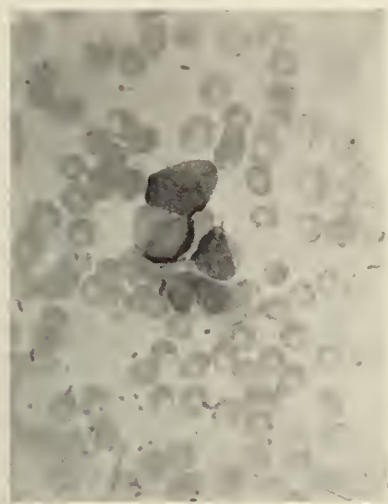


Fig. 2. A group of myeloblasts from the peripheral blood.

and hard. Scattered petechiae were present on the neck, shoulders and abdomen. No enlargement of the spleen or lymph nodes was found, and the remainder of the examination was essentially negative. There was no retinitis.

The white blood cells numbered 13,200, and the red blood cells were 1,800,000. The hemoglobin was 7.3 grams per 100 cubic centimeters. The coagulation time was six minutes. The urine was normal. The stained blood smear showed 90 per cent stem cells or myeloblasts. A few leukoblasts (Downey's leukoblasts) with granulation, an occasional myelocyte and promyelocyte were seen. An occasional adult neutrophile was present (five or six to the smear) and these showed advanced toxic degeneration with large granules, pyknotic and fragmented nuclei and frayed cytoplasm. An occasional monocyte and eight per cent small lymphocytes were seen. The red cells showed achromia with evidence of regeneration including polychromatophilia, punctuate basophilia, and an occasional normoblast. There was a marked thrombocytopenia. Many of the stem cells had long acidophilic rods in the cytoplasm. This blood picture did not alter appreciably except that more polymorphonuclears and more lymphocytes were

seen after transfusion. The total white cell counts did vary as will presently be discussed.

The patient received four transfusions of 300 cubic centimeters of blood. On September 5, 1940, the red blood cells numbered 2,940,000, and the hemoglobin was 9.9 grams per 100 cubic centimeters.

The patient's course was febrile and steadily downward. He became weaker each day. The area of necrosis spread along the jaw and over the floor of the mouth toward the tongue. Petechiae appeared in larger crops. At times the gums bled freely but hemorrhage was easily controlled with the local application of diluted moccasin venom. The temperature was irregular and varied between 100 and 104 degrees, rising slowly to 107 degrees before death.

The following table illustrates the course of the total white blood cells.

White Blood		
Date	Cells	Remarks
Aug. 30 .....	13,200	
Sept. 3 .....	19,900	
Sept. 5 .....	30,300	
Sept. 6 .....	42,600	Neoprontosil begun.
Sept. 7 .....	47,300	
Sept. 9 .....	32,200	
Sept. 10 .....	25,500	Death occurred.

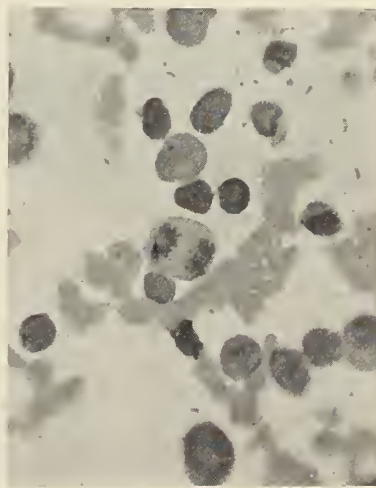


Fig. 3. Bone marrow with myeloblast figure.

Dr. Jackson of the Thorndyke Memorial Laboratory in Boston recently reported some remission in the course of acute leukemia, lasting from one to five months. He made the remark that when remissions occur, a series of events seemingly takes place. The white cell count falls to a low level and the patient seems to be very ill. Then clinical improvement appears and all the signs and symptoms rapidly disappear. He

states that the blood picture of the three patients recorded became normal in the interim. After a varying interval the signs and symptoms reappeared in his patients with a rapidly fatal termination.

In view of the hopelessness of the present patient's situation it was determined to try to lower the white count and so attempt to set the stage for a remission to occur. The gravity of the situation was carefully explained to the patient's family and after a consultation the following course was carried out.

Bone marrow aspiration was performed on September 6. The sternal marrow preparations greatly resembled the peripheral blood, stem cells predominating and little evidence of erythrocytic regeneration was seen. Only an occasional small vacuolated megakaryocyte was found. Few leuko-

as painful after the administration of the neoprontosil. The total white blood cell count fell from a peak of 47,000 to 25,000 at death. The count never reached the low levels (below 3,000) which Dr. Jackson's cases attained before remission occurred. The cerebral vascular accidents occurred too soon for any conclusion to be drawn, except that the leukemic mouth manifestation did regress with neoprontosil therapy.

#### 317 Equitable Building

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### THE OCCURRENCE OF AVIAN TUBERCLE BACILLI IN DRESSED POULTRY\*

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Avian tuberculosis has long been recognized as an important economic risk to those engaged in the rearing of poultry. Theoretically, the existence of this disease among poultry and swine should be reflected in human infection. The opportunity for such infection would appear to be abundant among those who rear the fowl and who in cleaning the chicken houses come into contact with the fecal discharges of infected birds. Those who eviscerate fowl at the poultry houses are exposed to the infection and "viable and virulent tubercle bacilli may occasionally occur in the eggs from tuberculous hens."<sup>1</sup>

A further theoretic mode of transmission to man would be by avian tuberculosis in swine. A recent typical report on swine infection with avian tuberculosis is that by Feldman.<sup>2</sup> Seventy-five animals which were considered to have gross lesions of tuberculosis were examined. Forty-seven out of the seventy-five lesions yielded tubercle bacilli; 25.5 per cent proved to be of the human type and 74.5 per cent were of the avian type. From an economic point of view the infection of swine is one of the most important aspects of avian tuberculosis. It has been estimated by Feldman<sup>1</sup> that "for the entire United States the loss at the time of slaughter from condemnation of the diseased tissues probably approximates \$2,000,000 annually". If avian tuberculosis occurs in dressed poultry as sold by our markets, a

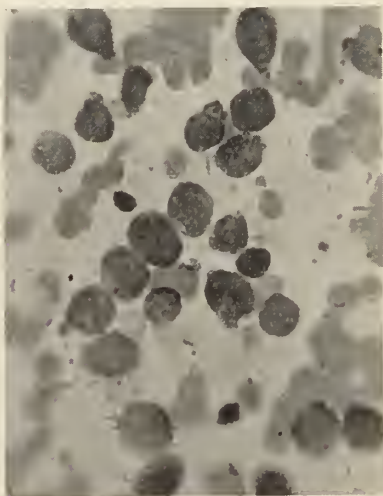


Fig. 4. Myeloblasts in the bone marrow.

blasts and myelocytes were present. On September 6 the patient received 240 grains of neoprontosil. He was given from 120 to 160 grains a day until September 9, when it was discontinued. Neoprontosil was used because it is less toxic than many other substances known to lower the white blood count and because it was feared that benzol or x-ray therapy would cause bleeding. On September 6 and 8 the patient had a series of what appeared to be cerebral vascular accidents with paralysis and aphasia and marked mental clouding. On September 9 he became comatose and on September 10 he died. Purpura was widespread before his death.

Dr. William Lanphere, D.D.S., who cared for the patient's gum lesions stated that the leukemic manifestation became much cleaner, the gangrenous areas separated and in places the base became clean. The mouth lesions were not nearly

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rather important mode of transmission to swine would appear to be that of feeding garbage containing offal from infected fowl.

Contrary to theoretic expectations, avian tuberculosis in man is extremely rare. Feldman<sup>1</sup> in a recent review of this subject states: "In only thirteen of the cases reviewed were there data that were sufficiently convincing to establish the presence of the avian tubercle bacillus with reasonable certainty". The explanation for this rarity appears to lie in the extremely low virulence of the organisms for man. Nevertheless, there are esthetic, if not medical, reasons for regarding the eating of meat of tuberculous fowl with a certain degree of abhorrence. The lesions of fowl tuberculosis occur most frequently in such organs as the liver, spleen and intestines. Since these organs are usually removed in dressing the fowl, evidence of the disease is not apparent to the consumer.

This study was limited to the occurrence of avian tubercle bacilli in dressed poultry. The specimens used consisted of spleens obtained from chickens and turkeys dressed and sold at an Iowa market. This market secured the fowl from certain farmers located in the immediate vicinity of Iowa City and from a local poultry house. The procedure for the isolation and culture of the avian tubercle bacilli was the same as that used by Feldman,<sup>3</sup> in which he reported four positive cultures from an examination of 125 fowl.

The specimens were emulsified by grinding in a physiologic solution of sodium chloride, treated with oxalic acid to destroy as many contaminating bacteria as possible and then centrifuged for thirty minutes. The supernatant liquid was discarded, and the precipitate was used to seed two tubes each of Petroff's and Dorsett's media with three per cent glycerin. These tubes were then incubated at 37.5 degrees, centigrade, for twelve weeks, except when positive cultures were obtained sooner. The Ziehl-Neelsen method of staining was used to determine whether the cultures were of acid-fast tubercle bacilli.

The chickens were divided into two groups according to age. The first group consisted of chickens between six and nine months of age; the second, of chickens between nine and eleven months of age. The first group included 58 specimens, none of which gave positive cultures. In the second group there were 32 specimens, and in this group three positive cultures were found, all of which were acid-fast. A third group consisted of the spleens of 25 turkeys in which examination revealed no cases of tuberculosis. The data are summarized in Table I.

Number of Specimens	TABLE 1		Positive Cultures
	Age (months)		
58 (chickens)	6 to 9		none
32 (chickens)	9 to 11		3
25 (turkeys)	6 to 9		none

#### CONCLUSIONS

1. Among ninety spleens from young chickens (under one year of age) positive cultures were obtained from three (3.3 per cent).
2. The possibility of the transmission of avian tuberculosis to swine in this locality by the feeding of uncooked garbage should be recognized.

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### INFLUENZA MENINGITIS TREATED SUCCESSFULLY WITH SULFATHIAZOLE

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Many cases of meningitis have been treated by sulfapyridine with good results and Sadusk and Nielsen have reported a case of staphylococcic meningitis with recovery from sulfathiazole orally, parenterally and intrathecally. The present case is reported not only to demonstrate that "sulfathiazole does not readily diffuse into purulent cerebrospinal fluid," but mainly to record the recovery of a case of influenza bacillary meningitis by oral and intrathecal administration.

#### CASE REPORT

G. B., a male infant, nine months of age, was admitted to Hamilton County Hospital on January 4, 1941, with a history of respiratory infection of three weeks' standing with no improvement under usual medication. On entrance the temperature was 104.8 degrees. The physical examination was negative except for some evidence of nasal congestion.

On January 10, (six days after admittance) there was a slight rise in temperature and with this was precipitated a severe general convulsion, more pronounced in the right side of the face, left arm, left leg with the fingers undergoing constant contraction. Dr. Charles J. Baker of Fort Dodge, Iowa, was called in consultation. The child was comatose for a while preceding and during the convulsion. The anterior fontanel was full, tense and suggestively pulsated. There were practically no extra-ocular movements. The

pupils were widely dilated and there was practically no reaction to light. The neck was slightly stiff. There was a bilateral positive Babinski reaction, bilateral positive ankle clonus, bilateral positive Kernig's sign and slight papilledema of the retina.

The spinal puncture showed fluid under slightly increased pressure, ground glass in appearance with a cell count of 570. Pandy's reaction was positive. Pleomorphic bacillary organisms were found on smear. A diagnosis of influenza bacillary meningitis was made.

Convulsions soon subsided after the spinal puncture. Sulfapyridine was started immediately, 24 grains, daily. After three days the baby began vomiting so that all medication was stopped on the sixth day. There was no improvement in the general symptoms.

On the eleventh day after convulsions, sulfathiazole was started orally, 24 grains, daily. There was some improvement in the general condition of the patient. However, the child was still semicomatose and the neck was completely extended backward. The concentration of the drug in the spinal fluid was only 1.9 milligrams.

On the twenty-fifth day, sulfathiazole sodium sesquihydrate 0.5 per cent was started intrathecally. The meningeal symptoms gradually subsided and the cell count decreased until February 9 (after five injections). The count was down to 100 and the head could easily be flexed. The baby began to play and the general condition improved until his discharge on February 21. On February 26, check of the spinal fluid at home showed 75 cells. The white blood count was 6,900.

The following is the laboratory report of the cell count with the corresponding medication:

Date	Count	Medication
Jan. 10	583	Sulfapyridine
" 12	1020	
" 13	1870	
" 15	2800	
" 16	1640	Sulfapyridine discontinued
" 17	807	
" 19	2350	
" 21	3110	Sulfathiazole started
" 23	6600	
" 24	8000	
" 26	8000+	
" 28	1180	(Vomiting)
" 30	1090	
" 31	930	
Feb. 3	4400	5 cc Sulfathiazole intrathecally added
" 4	1430	
" 5	1000	
" 6	930	
" 7	630	7 cc Intrathecally
" 8		7 cc Intrathecally
" 9	100	7 cc Intrathecally
" 10	100	7 cc Intrathecally
" 11	96	7 cc Intrathecally
" 14	100	All medication discontinued
" 21	95	
" 26	75	

The urine was essentially negative throughout. The blood count on January 5 showed: red blood count, 3,800,000; white blood count, 18,700; hemo-

globin, 58 per cent; polymorphonuclears, 66; and lymphocytes, 33.

#### COMMENT

The patient's general symptoms improved as long as we could continue the sulfathiazole orally in doses of 24 grains daily. However, we were unable to get the cell count below 930 and the meningeal symptoms never subsided. The count and meningeal symptoms improved after the first injection of sodium sulfathiazole sesquihydrate intrathecally and continued to do so until recovery. Intravenous therapy because of mechanical difficulties was not attempted. We were unable to estimate the value of sulfapyridine because of the intolerance to the drug.

#### SUMMARY

1. A case of influenza bacillary meningitis has been reported; recovery apparently was due to the administration of sulfathiazole.
2. It was necessary to use intrathecal administrations of sulfathiazole sodium sesquihydrate to acquire the necessary concentration in the spinal fluid.
3. No ill effects from the drug have been perceptible to the present date.

### THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

#### HOW NOT TO TREAT CANCER OF THE UTERINE CERVIX

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For a number of years the medical profession has carried on lay and professional programs of education in regard to cancer. The lay program is based upon the fact that certain forms of cancer are curable if detected early and treated efficiently. It has emphasized the need for patients with suggestive symptoms to seek early medical advice. The professional program is aimed to make all physicians cancer-conscious and has stressed the need for early, exact diagnosis and complete eradication of malignant lesions while they are still localized processes. It is generally believed that about 90 per cent of cervical cancers can be cured if the above conditions are fulfilled. Because of this fact innumerable articles indicating the importance of determining the etiology of abnormal uterine hemorrhage, especially near the menopause, have been written. It is discourag-



ing and distressing therefore that some physicians continue to treat uterine hemorrhage without even making a proper physical examination and when after months of irrational treatment, having made the examination, fail to determine the cause but give an expensive treatment and apparently feel that their obligation to the patient has been discharged. The errors, all too evident in the following case, which seem almost criminal and certainly are unprofessional, are published in the hope that other physicians will avoid similar mistakes.

#### CASE REPORT

The patient, a white woman forty-two years of age, was first admitted to the Finley Hospital January 14, 1941, as a patient of Dr. "A", because of "uterine hemorrhages, anemia and weakness".

*Family History:* The patient had two children, twenty-one and twenty-three years of age.

*Past History:* The patient's menstrual history was negative until the onset of her present illness.

*Present Illness:* For six months the patient had been having excessive uterine bleeding. She had been given hormone injections without results and she came to the hospital for radium therapy upon the doctor's advice.

*Physical Examination:* The patient was pale and complained of fatigue. The general examination of the head, neck, heart, lungs and abdomen was negative. A vaginal examination showed no enlargement of the uterus but "*the cervix is quite eroded*". The skin, extremities and nervous system were negative. The temperature was 100 degrees, the pulse was 120 and the respirations were 20 per minute.

*Laboratory Examination:* A catheterized specimen of urine showed a faint trace of albumin and an occasional red blood cell and leukocyte. A blood examination showed the white blood count to be 12,200; the red blood count, 1,870,000 with 24 per cent hemoglobin and a color index of 0.66. The red cells showed marked achromia.

*Preoperative Diagnosis:* Excessive uterine hemorrhage.

*Operative Notes:* The uterine cervix was dilated, radium was inserted and the vagina was packed with gauze.

*Course in Hospital:* The radium was removed after thirty-two hours and the patient was discharged after another eighteen hours. The final clinical diagnosis was "*uterine hemorrhage, secondary anemia with no evidence of cancer*".

*Subsequent Course:* For three months the

patient had relief from the uterine hemorrhage but it then recurred and persisted until she consulted Doctor "B" and upon his advice re-entered the hospital June 19, 1941. At that time in addition to the menorrhagia and weakness she complained of lower abdominal pain.

*Physical Examination:* The general examination was essentially negative. Locally the abdomen was scaphoid. The patient was tender over the lower abdomen. A vague, irregular mass was felt above the symphysis and to the left of the mid-line. The vaginal mucosa was smooth and the perineum was firm. The cervix was higher than usual and difficult to examine but there seemed to be a few nabothian cysts present. The uterus was slightly enlarged, felt hard and was slightly movable. The oviducts could not be outlined but each fornix was tender. The mass noted above was elastic and was probably an ovarian cyst.

*Preoperative Diagnosis:* Fibroid uterus with left ovarian cyst.

*Operative Notes:* A cystic mass about ten centimeters in diameter, partially filling the cul-de-sac was found in the left fossa. It was liberated and found to be attached to a pedicle. The right ovary resembled a collapsed cyst. The uterus felt hard in the lower portion, presumably as the result of the radium therapy, and because it was considered non-malignant a subtotal hysterectomy was performed.

*Postoperative Diagnosis:* Fibroid uterus, left ovarian cyst and ruptured right ovarian cyst.

*Pathologic Report:* The ovarian cysts were of the follicular type. The uterine cavity was filled with recently clotted blood. About two centimeters above the line of the operative incision there was a distinct line of demarcation below which the tissue was hard and somewhat friable. On microscopic examination this area was found to be infiltrated with large and small masses of squamous epithelial cells which were only slightly differentiated.

*Anatomic Diagnosis:* Grade 4 squamous cell carcinoma of the uterus with hemorrhage, extension to the myometrium; follicular cysts of the ovaries.

#### COMMENT

It has been said that the fate of the patient with curable cancer is in the hands of the first physician consulted. Either he makes an exact diagnosis or he procrastinates and the patient loses his or her chance of cure. The case presented illustrates this point. The original error in the case presented lies in the fact that a diagnosis, based

upon adequate study, was not made but the symptom of uterine hemorrhage was treated. Even the source of the hemorrhage was not determined. Because the etiology of the hemorrhage was undetermined the treatment was irrational and without benefit. The second error was the diagnosis of the erosion of the cervix as non-malignant without adequate study. None of the clinical methods by which malignancy is ruled out was attempted.\* The rule governing the cancer-conscious physician, that all cervical erosions are suspicious until malignancy has been eliminated as a possibility by well known clinical procedures and by microscopic study, was neglected. The next error was the failure to keep the patient under observation to determine the results of the radium therapy upon the lesion.

As a result of these errors, the second physician was misled and assumed that the changes in the cervix were due to the radium treatment and that the cause of the menorrhagia was probably related to the ovarian cyst. In performing the supracervical hysterectomy, the line of incision was through the involved portion of the uterine wall. The carcinomatous stump of the cervix was left and since it could be assumed that the neoplasm had extended to the parametrial tissues, further surgery was contraindicated and only palliative irradiation could be offered. Therefore one year after consulting a physician and six months after the first vaginal examination, a correct diagnosis was made on routine pathologic examination and only after the condition had become hopeless. These facts are a sad commentary upon the manner in which some physicians practice medicine. While under certain circumstances, the treatment of symptoms without an exact diagnosis is permissible, this is not true of abnormal uterine hemorrhage, the cause of which should always be determined. Above all, the possibility, even the probability, that cancer may be the cause must always be kept in mind. If after adequate clinical studies, the diagnosis remains in doubt, biopsy from the cervix or the uterine fundus or both is imperative. Only in this manner can cancer of the uterus be diagnosed early, and cure to a large extent depends upon early diagnosis.

\*These methods are described in the Cancer Manual of the Iowa State Medical Society.

## POSTGRADUATE COURSE IN OBSTETRICS

Since January 28, 1940, the University of Iowa has given to fifty-seven physicians an informal course in obstetrics. The program was established under the auspices of the State Department of Health and is included under the Division of Maternal and Infant Welfare. During the coming year this program is to be continued under a stabilized setup, which will include didactic teaching on selected subjects. The course will occupy a six-day period and will be offered each time to three or four practitioners every other week as outlined in the following schedule:

1941			
Oct.	6 —	Oct.	11
Oct.	19 —	Oct.	25
Nov.	3 —	Nov.	8
Nov.	17 —	Nov.	22
Dec.	1 —	Dec.	6
Dec.	15 —	Dec.	20

1942			
Jan.	5 —	Jan.	10
Jan.	19 —	Jan.	24
Feb.	2 —	Feb.	7
Feb.	16 —	Feb.	21
March	2 —	March	7
March	16 —	March	21
March	30 —	April	4
April	13 —	April	18
April	27 —	May	2
May	11 —	May	16
May	25 —	May	30
June	15 —	June	20

Physicians who enroll will be asked to appear at 9:00 a. m. Monday and remain until noon on Saturday of the specified week. There will be no charge for the instruction, but the visiting men will be required to maintain themselves.

Physicians attending the instruction will spend most of their time within the Department of Obstetrics and Gynecology. Didactic teaching will be available on toxemias of pregnancy, bleeding in pregnant and non-pregnant conditions, tumors of the genital tract, pelvic measurements, vaginal discharges, chemotherapy, induction of labor and use of oxytocics, endocrinology, prematurity and care of the newborn baby. Each day there will be facilities to observe different gynecologic and obstetric operative procedures and to make ward walks on the two divisions.

Further information and assignments for instruction may be secured from Dr. A. W. Diddle, Department of Obstetrics and Gynecology, University of Iowa, University Hospitals, Iowa City, Iowa.

### Iowa Interprofessional Annual Meeting and Election of Officers

Sunday, September 7, 1941, 1:00 p. m.

Hotel Kirkwood, Des Moines, Iowa



# STATE DEPARTMENT OF HEALTH

*Walter L. Biering*

## Eleven Health Districts in Iowa

Iowa has experienced phenomenal progress in the development of whole-time health service since January 1, 1936. At that time three counties, Woodbury, Des Moines and Washington, maintained whole-time public health programs. Today 38 counties, having an aggregate population of 778,685, or 30.7 per cent of the state's total, have provided for similar services. During the fiscal year ending June 30, 1941, four counties were added, namely, Crawford, Union, Humboldt and Mitchell.

On July 1, a new plan was established with the purpose of bringing effective health services nearer to each community. The state is divided into eleven local health jurisdictions or districts (see accompanying map). The number of counties in each district varies from seven to twelve and the population from 153,000 to 357,000. Each district (save one) is staffed with especially trained medical, engineering and public health nursing personnel. In addition to the staff which serves on a district-wide basis, four counties, Des Moines, Polk, Washington and Woodbury, have local county health service as provided by the County Health Unit Act, Code of Iowa 1939, Chapter 107.1. Thirty-four counties have established countywide generalized public health nursing service; these counties are privileged to use the epidemiologic, sanitation, public health nurse consultatory, and other essential services of the district staff. Each of the four "county health services" is included in one of the several district areas, at the same time retaining "county unit" status.

District headquarters, counties, population and personnel of the health districts are as follows:

### District No. 1, Population 292,835

Headquarters: Decorah

Counties: Allamakee, Winneshiek, Mitchell, Clayton, Black Hawk, Fayette, Butler, Howard, Floyd, Chickasaw, Bremer and Buchanan.

District Staff: H. H. Ennis, M.D., C.P.H., Director;

R. B. McAllister, B.S., Public Health Engineer; Margaret Maxwell, R.N., Public Health Advisory Nurse.

### District No. 2, Population 183,763

Headquarters: ———

Counties: Worth, Winnebago, Kossuth, Hancock, Cerro Gordo, Wright, Franklin, Hardin and Grundy.  
(Organization to be completed)

### District No. 3, Population 194,604

Headquarters: Le Mars

Counties: Osceola, Lyon, O'Brien, Plymouth, Clay, Emmet, Dickinson, Palo Alto, Sioux, Buena Vista and Cherokee.

District Staff: D. M. Harris, M.D., M.S.P.H., Director; E. J. Marzec, B.S., Public Health Engineer; Winifred Cleveland, R.N., Public Health Advisory Nurse.

### District No. 4, Population 192,937

Headquarters: Sioux City

Counties: Woodbury, Monona, Crawford, Ida, Harrison and Shelby.

District Staff: John A. Cowan, M.D., M.S.P.H., Director; F. W. Pickworth, B.S., Public Health Engineer; Eva Woerth, R.N., Public Health Advisory Nurse.

### District No. 5, Population 224,542

Headquarters: Fort Dodge

Counties: Humboldt, Hamilton, Webster, Calhoun, Sac, Greene, Boone, Pocahontas, Carroll, Audubon and Guthrie.

District Staff: F. J. Austin, M.D., M.S.P.H., Director; J. A. Sampson, B.S., Public Health Engineer; Elizabeth Wyss, R.N., Public Health Advisory Nurse.

### District No. 6, Population 353,040

Headquarters: Des Moines

Counties: Polk, Marshall, Story, Jasper, Dallas, Madison and Warren.

District Staff: E. G. Zimmerer, M.D., M.P.H., Acting Director; R. C. Hanlon, M.S., Public Health Engineer; Alma E. Hartz, R.N., Public Health Advisory Nurse.

## District No. 7, Population 152,773

Headquarters: Washington

Counties: Tama, Johnson, Washington, Benton, Iowa, Poweshiek and Keokuk.

District Staff: Ruth E. Church, M.D., M.S.P.H., Director; K. S. Krause, B.S., Public Health Engineer; Frances Goodrich, R.N., Public Health Advisory Nurse.

## District No. 8, Population 356,882

Headquarters: Manchester

Counties: Dubuque, Delaware, Jackson, Clinton, Jones, Linn, Scott and Cedar.

District Staff: C. L. Putnam, M.D., M.S.P.H., Director; A. L. Bennett, B.S., Public Health Engineer; Hazel Roberts, R.N., Public Health Advisory Nurse.

## District No. 9, Population 166,367

Headquarters: Burlington

Counties: Des Moines, Muscatine, Louisa, Henry, Jefferson, Lee and Van Buren.

District Staff: E. C. Sage, M.D., M.P.H., Director; C. C. Potter, B.S., Public Health Engineer; Olive Johnson, R.N., Public Health Advisory Nurse.

## District No. 10, Population 227,259

Headquarters: Centerville

Counties: Mahaska, Marion, Monroe, Appanoose, Wayne, Decatur, Union, Clarke, Wapello, Davis, Lucas and Ringgold.

District Staff: F. J. Condon, M.D., C.P.H., Director; R. J. Schliekelman, B.S., Public Health Engineer; Norma Michaelson, R.N., Public Health Advisory Nurse.

## District No. 11, Population 193,306

Headquarters: Council Bluffs

Counties: Pottawattamie, Cass, Adair, Mills, Montgomery, Adams, Fremont, Page and Taylor.

District Staff: W. S. Petty, M.D., M.P.H., Director; William R. Mark, M.S., Public Health Engineer; Public Health Advisory Nurse to be appointed.

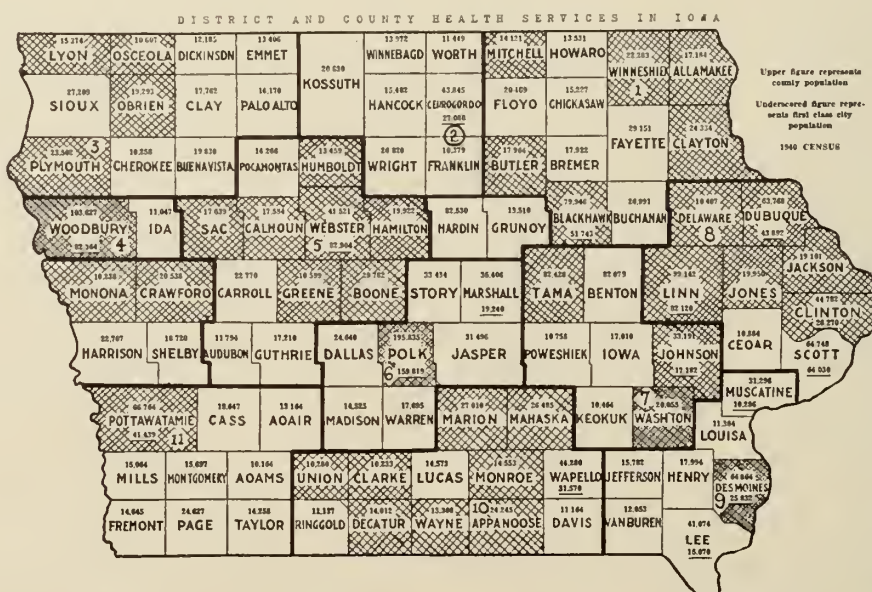
All tumor diagnostic centers, venereal disease clinics now operating or to be established, as well as the statewide tuberculosis case-finding program, are coordinated with the health district arrangement.

## POLIOMYELITIS SEASON UNDERWAY

Ten cases of poliomyelitis were reported to the State Department of Health in July. Five of the cases were notified from Burlington in Des Moines County. Other counties reporting cases were Allamakee, one; Polk, one; Story, one; and Wayne, two.

According to the Health Officers' Weekly Statement, official morbidity report of the United States Public Health Service, cases with numbers as indicated were reported from the following states for the week ending Saturday, July 26: Georgia, 79; Alabama, 58; Tennessee, 24; Florida, 16; New York, 11; Ohio, 11; Kentucky, 11; Mississippi, ten; Michigan, seven; Minnesota, five; Illinois, four; Iowa, three; Wisconsin, none; and Missouri, none.

The Department is cooperating with other agencies in efforts to keep Iowa physicians informed regarding the occurrence, clinical aspects and management of poliomyelitis. Literature, in the form of articles and bulletins, for distribution to the medical profession, has been made available to the State Department of Health through courtesy of the Department of Orthopedic Surgery, University of Iowa.





### EQUINE ENCEPHALOMYELITIS IN THE MIDWEST

During July and August, unusual occurrence of encephalitis has been reported in several mid-western states, including Minnesota and North Dakota. Neutralization tests carried out on serum specimens from some of the patients have revealed the presence of antibodies against the western strain of equine encephalomyelitis virus. Disease due to the virus of encephalomyelitis is characterized by fever, signs of cerebral irritation, (spasmodic contractions or generalized convulsions), marked stupor and coma. Onset of illness is usually abrupt, with tense, severe headache. The patient may be restless, difficult to restrain and irrational. Spinal fluid is under pressure, cells varying in number between 40 and 200.

Physicians who may have occasion to observe a case or suspected case of encephalitis are requested to notify the local health officer and the State Department of Health.

### CANCER DEATHS IN IOWA

#### A CORRECTION

ERIC P. PFEIFFER, M.D.

In regard to an article written in the JOURNAL of the Iowa State Medical Society, pages 206-207, of May, 1941, entitled: "Cancer Deaths in Iowa in 1940," Dr. E. D. Plass of the University of Iowa, has called to my attention a discrepancy

existing between the State Health Department classification of the urban and rural population breakdown, and the United States Census Bureau population breakdown in the census figures for the year, 1940, as follows:

The United States Census Bureau figures for 1940 for urban population total 1,084,231, and for rural 1,454,087, the urban including cities over 2,500, and the rural, all areas under 2,500 population; the Department of Health, Division of Vital Statistics interpretation of rural population is any area under 10,000 population, and urban over 10,000 population.

Clerks in the Division of Vital Statistics used United States Census Bureau urban and rural population figures, and calculated all rates therefrom on a basis of Iowa's interpretation of urban and rural division, thus resulting in an error between urban and rural cancer death rates, showing an erroneous 70 per cent higher cancer death rate in rural areas.

According to the figures submitted by Dr. E. D. Plass and verified by the Iowa State Department of Health, the rural cancer death rates in Iowa in 1940 should have been 136.79, and the urban cancer death rate in Iowa in 1940 should have been 137.29, therefore showing that no material difference existed between urban and rural cancer death rates in Iowa in 1940.

Figures in Iowa do indicate that the cancer death rate in 1940 was higher than for any previous year. Dr. Plass pointed out that not enough attention is, as yet, being given to early and adequate treatment of malignant diseases.

### PREVALENCE OF DISEASE

Disease	July '41	June '41	July '40	Most Cases Reported From
Diphtheria .....	8	7	5	For the State
Scarlet Fever .....	57	77	56	For the State
Typhoid Fever .....	13	3	10	For the State
Smallpox .....	2	12	30	Dubuque
Measles .....	225	613	305	Black Hawk, Humboldt, Boone, Kossuth
Whooping Cough .....	199	152	162	Woodbury, Black Hawk, Polk
Brucellosis .....	32	19	30	For the State
Chickenpox .....	55	183	43	Woodbury, Mahaska
German Measles .....	3	11	7	Plymouth, Scott, Winnebago
Influenza .....	4	10	6	Buena Vista, Clark, CCC Camp, Polk
Malaria .....	10	0	9	Des Moines, Lee, Jackson, Polk, Scott
Mumps .....	112	307	44	Black Hawk, Dubuque, Mahaska, Marshall, Woodbury
Pneumonia .....	25	34	62	For the State
Poliomyelitis .....	10	0	21	Des Moines, Wayne, Allamakee, Polk, Story
Tuberculosis .....	35	47	28	For the State
Gonorrhea .....	117	99	176	For the State
Syphilis .....	180	135	256	For the State

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## POLIOMYELITIS SEASON BEGINS

Once again that time of year is at hand when poliomyelitis has its greatest incidence. Last year Iowa experienced one of its worst epidemics from this disease—some 1,000 cases. Ordinarily it might be expected that an area so thoroughly saturated would be relatively immune, perhaps for several years to come. Whether or not that will be the situation this year remains to be seen. Thus far the number of cases reported has been few, but it must be remembered that the peak of incidence in this part of the country falls in September and October. The chances are good that this will be a comparatively light year for poliomyelitis in Iowa.

As far as we are aware no very practical new knowledge concerning the disease has been developed during the past year, particularly knowledge of importance to the public or even to the practicing physician. Bacteriologists, research workers and public health officials on the other hand have become stirred up over the discovery of the virus in the feces of human active and abortive cases, and its demonstration in sewage many yards away from the original source. It has also been determined that certain strains of virus can be adapted for experimental study in mice. The importance of these discoveries in the eventual solution of the problem of poliomyelitis is not to be minimized, but for the present at least it must be admitted that they are of no help in prevention and treatment—the two phases of poliomyelitis of immediate concern to parents and physicians.

Unfortunately, if we are to face the facts, and face them we should, in order to avoid holding out false hopes or promises to our patients, it must

be stated that as of to date no method of proved value in either prophylaxis or therapy has been demonstrated. The work with convalescent serum unquestionably should be continued on a clinical trial basis, but it must be recognized for what it is—a purely experimental and by no means proved theory. Furthermore, we believe the experiment has progressed so that only one point of debate remains—that of the possible effect of large doses of potent serum administered intravenously in the preparalytic stage of the disease. By large doses we mean 300 to 500 cubic centimeters. Some competent observers insist that serum in these amounts does exert a specific effect. Equally competent observers, on the other hand, maintain the contrary. It is certain, however, that the serum is harmless to administer, and as a source of fluid and protein, may be of nonspecific value. Under these circumstances, there is no rational alternative than to continue the experiment in properly selected cases, and with a careful unbiased evaluation of results. Administration of small doses of serum (40 to 50 cubic centimeters) intramuscularly is probably not only useless but also a waste of serum.

One final point which might be mentioned as having some possible significance in the management of poliomyelitis cases has to do with the finding, previously mentioned, of virus in human feces and in sewage. Since the epidemiology of poliomyelitis is not definitely known it is conceivable that infected sewage may play some part. If this proves to be true it would seem advisable, especially in rural areas, to practice disinfection of stools as is commonly done in typhoid fever.

## STATEWIDE IMMUNIZATION PROGRAM CONTINUED

The excellent task performed by the Committee on Child Health and Protection, under the chairmanship of Dr. H. E. Farnsworth, in cooperation with the Iowa State Medical Society and the State Health Department, in attempting to rescue Iowa from its undesirable high ranking among states in respect to the incidence of smallpox, deserves further comment. The first campaign was conducted in 1939. More than seventy thousand vaccinations were performed during that period. In 1940 both diphtheria and smallpox were stressed and it is gratifying to note that some 42,775 smallpox vaccinations and 54,031 diphtheria immunizations were administered to the children of the state.

With that record of achievement to its credit the Committee asked the House of Delegates at the Davenport meeting in May to approve a con-



tinuation of its immunization program for the fall of 1941. Needless to say this was readily granted. We are informed that the week beginning November 3 has been tentatively set for this year's drive.

We are informed, too, that the Committee plans this year to recommend two injections of diphtheria toxoid, two to four weeks apart, instead of one injection as was employed last year. We believe this to be a most wise recommendation. Some years ago when alum precipitated toxoid first appeared it was thought that a single injection would be sufficient to confer lasting and permanent immunity. This belief was based on the fact that the follow-up Schick test in from three to six months following the single dose was repeatedly found to be negative in over 90 per cent of the cases. Unfortunately, however, subsequent investigations by numerous independent observers have shown the fallacy of this opinion. In series after series it has been found that as many as 50 per cent of the children whose Schick tests were negative at the first follow-up testing had become positive within a period of two or three years. The danger in the one dose method, therefore, becomes apparent at once. Unless otherwise warned, parents of children who have received only one injection are led to a position of false security, as far as the danger of clinical diphtheria in their children is concerned. This is a situation which could well result disastrously through delay in seeking medical aid and institution of medical treatment. We quote the following from the "Report of the Committee on Immunization and Therapeutic Procedures for Acute Infectious Diseases of the American Academy of Pediatrics." It is as authoritative a statement on the subject as any we know.

"Diphtheria toxoid (Ramon) or alum precipitated toxoid is recommended by this Committee. Either agent may be used for children under ten years of age in doses of 0.5 c.c., 1.0 c.c. and 1.0 c.c. given *subcutaneously* at intervals of from two to four weeks. This amount of antigen may produce local and general reactions in older children or adults. For the latter, the dosage is therefore reduced and 0.1 c.c. is injected *subcutaneously* and then 0.2 c.c. and 0.5 c.c. at intervals of from two to four weeks. An additional dose of 0.1 c.c. is given if the reactions have not been too severe. It is unnecessary to inject a large amount of toxoid. Individuals in this age group will be immunized if several doses are given with long intervals between injections. *One dose of alum precipitated toxoid cannot be relied upon to immunize an individual.* The Schick test may become negative within a month after the last injection. A horse and goat toxin-antitoxin is some-

times used for individuals over ten years of age. This is also injected *subcutaneously* in doses of 0.5 c.c., 1.0 c.c. and 1.0 c.c. at two to four week intervals. The immunity thus produced is established more slowly. It may take as long as a year for the Schick test to become negative and the individual may become sensitized to horse serum.

"Always do a Schick test within six months after immunization is completed to determine whether immunity has been established. Re-immunize if necessary. It is preferable not to immunize before nine months as it may be difficult to do so before that age. Some physicians like to vaccinate against smallpox first and then immunize against diphtheria because of nonspecific enhancement of antigen stimulation. To determine those who have lost their immunity one might re-Schick at subsequent intervals during epidemic periods. This certainly should be done at six years when the child enters school and at twelve or before he enters high school."

It would be our suggestion that this matter of the number of injections be given serious consideration by each county medical society in order that an agreement may be reached before the campaign starts.

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#### SOME FACTS ABOUT ENCEPHALITIS

Recently we have noted several newspaper accounts of cases of encephalitis appearing with increasing frequency in some of our neighboring states and in our own state as well. These accounts indicated that mosquitoes might be responsible for spread of the infection from animals to man.

Under these circumstances it seemed to us desirable to gather what information was available and present it to readers of the JOURNAL. Consequently we consulted Iowa's Health Commissioner, Dr. Walter L. Bierring, who has been in close touch with the situation. At his suggestion Dr. Eugene C. Wagner, director of the Serum Center of the Iowa State Department of Health, prepared the following pertinent facts for us.

Encephalitis is of particular interest to physicians in Iowa at the present time because of the possibility of a spread of the disease to this state from surrounding states, namely Minnesota, North Dakota and parts of South Dakota, where it has now become epidemic. The present discussion will be limited to the *Western Equine Type* of encephalitis although there are at least three other types found in the United States, namely: the *Eastern Equine Type*, found along the Atlantic seaboard east of the Appalachian and Blue Ridge Mountains, and responsible for an outbreak of

encephalitis among humans in Massachusetts in 1938 resulting in a mortality rate of 66 per cent; the *St. Louis Type* responsible for an outbreak in St. Louis in 1933 with a mortality rate of 20 per cent; and the *Vienna Type* also called lethargic or Type A. An epidemic in the San Joaquin Valley, California, due to the Western Equine Type resulted in a death rate of 6.9 per cent. The epidemic of 1939 in the Yakima Valley, Washington, was of mixed Western Equine and St. Louis Types and showed a death rate of 22.4 per cent. Information received from Dr. A. J. Chesley of the Minnesota State Department of Health indicates the cases occurring in that state at the present time are due to the Western Equine Type virus although the blood of three patients showing protective substance of this type also proved positive for the St. Louis Type. These references along with the statement that in the past few years cases of encephalomyelitis in horses have been reported from forty-one of the forty-eight states indicate how widespread this disease is in the United States.

#### *Etiology*

In each type a filterable virus is the causative agent. In 1930 Meyer and his co-workers proved that a filterable virus was responsible for encephalomyelitis in horses. In 1932 he suggested the probability of human infection with this virus. Later Ecklund and Blumstein of Minnesota found antibodies in the blood of patients having recovered from encephalitis which were capable of neutralizing the Western Type of virus. In 1938 Beatrice Howitt reported the recovery of the Western Type virus from the brain of a patient who died of encephalitis. It has been proved that guinea pigs, rats, mice, monkeys, rabbits, mallard ducks, gophers, pheasants and adult quail as well as horses and mules, are susceptible to the virus. However, it has been observed that horses which have recovered from attacks due to the Western Type virus are not immune to the Eastern Type.

#### *Epidemiology*

Horses suffering from encephalomyelitis act as a reservoir from which the disease is transmitted to humans, probably by insect vectors. Kelser transmitted Western Type virus from guinea pig to guinea pig by the bite of the *Aedes Aegypti* mosquito and other workers have added nine other species of *Aedes* found capable of transmitting one or both types of virus. The disease shows seasonal incidence occurring only during the summer and early autumn. Distribution is spotty in the infected area. There is usually only one case in a family without evidence of contact between cases. However, human cases are more

numerous in rural areas and small towns where the horse population is greater.

#### *Present Situation*

Minnesota reports 2,059 cases among horses with 397 deaths, during the months of May, June, July to August 11. These cases are reported from 73 of the 87 counties. The report of human cases is as follows:

June 24-30 .....	25 cases
July .....	119 cases
August 1-15 .....	245 cases
<hr/>	
Total .....	389 cases
Deaths .....	25
Mortality Rate .....	6.4%

Cases have been reported from 72 of the 87 counties. Only a few cases have been reported from cities. Occurrence is three times more frequent among males than among females over fifteen years of age. Among children the distribution is about equal between boys and girls. In Iowa, from June 1 to August 4, 1941, 1,100 cases of equine encephalomyelitis have been reported among horses with 236 deaths. Northern and western counties report the most cases. Cases among humans are reported as follows:

1939 .....	18
1940 .....	38
1941—January .....	0
February .....	0
March—Pottawattamie County	1
April .....	0
May .....	0
June —Cherokee .....	1
Clarke .....	1
July —Adams .....	1
Jones .....	1
Palo Alto .....	1
Washington .....	1
Winnebago .....	1
August—(19th inclusive)	
Adair .....	1
Dickinson .....	2
Plymouth .....	6
Pottawattamie .....	8
Woodbury .....	10

#### *Clinical Aspects*

The incubation period for Western Equine Type is not known. Dr. F. C. Helwig, however, reports one fatal human case in which the patient was inoculated accidentally with the chick embryo Western Equine Type virus fourteen days before he became ill.

#### *Symptoms and Physical Signs*

Frequently the onset is sudden with but a few



hours of prodromal symptoms, although some patients may have mild headache and malaise for as long as two weeks before onset of severe symptoms. Grippe-like symptoms at onset are striking, patients complaining of severe headache, fever and malaise, with myalgia and arthralgia outstanding. Abdominal pain, nausea and vomiting occur frequently. Photophobia and vertigo may be early features. Later manifestations are irritability, restlessness, lethargy, drowsiness, mental confusion and coma. Convulsions are a less frequent late manifestation. Some patients may complain of diplopia. Temperature ranges from 102 to 105 degrees. The maximum temperature is attained from the second to the sixth day. Physical examination will usually reveal the absence of abdominal reflexes with other reflexes depressed. Nuchal rigidity is frequently a feature. Coarse tremors of the tongue, chin and hands may be noted late. Nystagmus, stobismus and even paralysis may be seen in a small number of patients. The white blood count usually ranges from 10,000 to 20,000 with an increase in polymorphonuclear cells. W. M. Hammon noted clinical jaundice in some cases and increased icterus index in most cases occurring in the outbreak in the Yakima Valley. The spinal fluid is usually under increased pressure and the cell counts range from 100 to 300. Early in the disease polymorphonuclear cells may be found in the spinal fluid, later the cells are almost all lymphocytes. The protein content of the spinal fluid is usually slightly increased and sugar is normal. Cultures remain sterile.

#### *Diagnosis*

Diagnosis is made on symptoms, signs, and laboratory findings. Dr. Cox of the Rocky Mountain laboratories of the U. S. Public Health Service at Hamilton, Montana, states that protective antibodies begin to appear 10-14 days after recovery, the maximum titre being reached four to six weeks after recovery. The diagnosis may be confirmed by guinea pig protection tests done with the recovered patient's blood serum. If positive the patient's serum will protect guinea pigs from inoculation with the known virulent virus. Thus the type virus responsible for the illness can also be identified. Twelve c.c. of blood for these protection tests should be drawn from suspected cases from four to six weeks after onset of the illness with precautions to maintain the sterility of the blood and sent to the State Hygienic Laboratory at Iowa City from where it will be forwarded to the Rocky Mountain Laboratories. The active virus can be recovered from postmortem specimens and identified.

#### *Treatment*

From a prophylactic standpoint J. W. Beard, Dorothy Beard and Harold Finkelstein vaccinated a group of 100 people with a bivalent formalized chick embryo vaccine of the type which has proved effective in the protection of horses, and found a gratifying high serum antibody content. Preparations of this type are not available at the present writing. Immunization of large groups on a community basis has not been attempted.

From a therapeutic standpoint Zichis and Shaughnessy have proved hyperimmune rabbit serum is effective in treating guinea pigs infected with Western Equine Type virus immediately after the onset of symptoms. To our knowledge specific antiserum is not as yet available for general use. Treatment at present consists of symptomatic and supportive measures. During the outbreak in the Yakima Valley, Hammon reports that physicians using sulfonamide drugs felt they were of therapeutic value although no good evidence for definite conclusions was available. He feels further trial of these drugs is warranted. The usual precautions during their use should be practiced to avoid side reactions. Immune transfusions of blood obtained from compatible donors who have recovered from encephalitis may prove of value if the blood is taken from a donor four to six weeks after he has recovered from his illness.

#### *Control Measures*

The following control measures are recommended as being desirable:

1. Early vaccination of horses and mules.
2. Mosquito control and adequate screening of houses.
3. Recognition and reporting of all cases.
4. Quarantine of cases according to Rules and Regulations of the State Department of Health.
5. Concurrent and terminal disinfection.

#### *Conclusion*

Equine encephalitis formerly thought to be significant only to the livestock industry has now become an important consideration for physicians and public health authorities. There is a definite possibility that there may be a spread from neighboring states into Iowa. Cases occurring in Iowa are probably due to the Western Equine Type of virus. There is some evidence that this disease is spread to humans through mosquito vectors from animals, particularly horses. The efficacy and safety of vaccination of humans have not been definitely proved. Specific treatment of this disease has not as yet proved efficacious among hu-

mans. Specific serum is not available at the present time. Cases should be reported in order that further information concerning the epidemiology of these cases may be obtained. This information may be of value in casting more light on the problem of the source and spread of this disease, because animals other than horses and mules may be important as sources of this illness.

### INTERNATIONAL ASSEMBLY

This year's International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the public auditorium, Minneapolis, Minnesota, October 13, 14, 15, 16 and 17.

The high standing of the medical profession of Minneapolis, combined with the unusual clinical facilities of its great hospitals and excellent hotel accommodations, makes this city an ideal place in which to hold the Assembly. The officers of the Inter-State Postgraduate Medical Association, and those of the Hennepin County Medical Society and the Minnesota State Medical Association, extend a very cordial invitation to all members of the profession in good standing to attend the Assembly.

A full program of scientific and clinical sessions will take place each day and evening of the Assembly, starting at eight o'clock in the morning. Pre-assembly and post-assembly clinics will be conducted, free of charge, in the Minneapolis Hospitals on the Saturdays previous to and following the Assembly, for visiting members of the profession.

Scientific and commercial exhibits of interest to the medical profession will be an important part of the Assembly. These exhibits will be open to members of the medical profession in good standing without payment of the registration fee. The registration fee for the scientific and clinical sessions will be \$5.00.

With a great deal of pride and satisfaction, we call your attention the list of distinguished teachers and clinicians who are to take part on the program and whose names appear on page xix of the advertising section of this Journal.

Dr. Roscoe R. Graham, President, Toronto, Canada.  
Dr. George W. Crile, Chairman Program Committee,  
Cleveland, Ohio.  
Dr. William B. Peck, Managing-Director.

### MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

#### Meeting of the Executive Cancer Committee July 27, 1941

The Executive Cancer Committee of the Iowa State Medical Society met at the Hotel Fort Des Moines in Des Moines on Sunday, July 27, 1941, with the following persons present: Doctors M. C. Hennessy, H. W. Morgan and A. W. Erskine of the committee; Doctors W. L. Bierring and E. G. Zimmerer of the State Department of Health; and Dr. E. D. Plass and Mrs. A. V. O'Brien of the Executive Board of the Women's Field Army.

The meeting was called to order by the chairman, Dr. Hennessy, at 11:00 a. m. The preparation of a

pamphlet on cancer for lay distribution was discussed; the plans of the State Department of Health for its Cancer Control division were considered; various aspects of the Women's Field Army and its relation to the national organization, as well as to the Cancer Committee, were studied; the tumor clinic organization was discussed, and several points were clarified. Meeting adjourned at 1:00 p. m.

#### Meeting of the Executive Board of the Iowa Division of the Women's Field Army July 27, 1941

The Executive Board of the Women's Field Army, Iowa Division, met at the Hotel Fort Des Moines in Des Moines on Sunday, July 27, 1941. Those present from the Board were Mrs. A. V. O'Brien, Doctors E. D. Plass, M. C. Hennessy, and H. W. Morgan; from the State Department of Health, Doctors W. L. Bierring and E. G. Zimmerer; and Dr. A. W. Erskine of the Executive Cancer Committee.

Dr. Morgan was elected chairman of the Board; the relationship between the state and national organization was discussed and the percentage of enlistment fees to be sent to the national group was set at thirty per cent; the use of the Memorial Fund to pay running expenses was authorized; the continuance of the Bulletin was voted, with Dr. Plass to act as editor until the end of the fiscal year; and various educational projects were considered. In this connection, Dr. Zimmerer will speak to high school and college students during the campaign. Mrs. O'Brien was elected State Commander for the ensuing year, and the meeting adjourned at 2:45 p. m.

### NEW MEDICAL DIRECTORY

About September 1, an information card will be sent from the headquarters office of the American Medical Association to every physician in the United States and Canada. The information secured is to be used in compiling the Seventeenth Edition of the American Medical Directory.

The directory is prepared at regular intervals in the Biographical Department of the American Medical Association. The last previous edition appeared in 1940. This volume is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States; it has been especially valuable in the medical preparedness program. The directory provides full information concerning medical colleges, specialization in the field of medical practice, memberships in special medical societies, and tabulations of medical journals and medical libraries.

Physicians are especially urged to state whether or not they are on extended active duty for the medical reserve corps of the United States Army and Navy. The card should be filled out and returned promptly whether or not a change has occurred in any points on which information is requested. If a change of address is to occur before March 1, 1942, it should be reported at once.



# SPEAKERS BUREAU ACTIVITIES

## SPECIAL INSTITUTES ON INDUSTRIAL HEALTH

A second series of Special Institutes on Industrial Health, sponsored by the Iowa State Department of Health in cooperation with the Committee on Industrial Health and the Speakers Bureau of the Iowa State Medical Society, will be held during the week of September 22. These institutes were planned as a result of the success of the first series in bringing physicians and industrialists together to discuss their mutual problems of medicine in national defense. The coming institutes are scheduled as follows:

Council Bluffs.....Monday, September 22  
 Waterloo .....Tuesday, September 23  
 Dubuque .....Wednesday, September 24

Each institute will be scheduled as a special meeting of the respective county medical society, and the officers of each county society are assuming responsibility for local arrangements.

Plan now to attend the meeting which will be most convenient for you and take advantage of this opportunity to hear the latest thought on occupational health. Programs containing complete information on the institutes will soon be mailed from this office.

## RECORDING ON POLIOMYELITIS

The Speakers Bureau has available a very excellent recording on "Poliomyelitis" by Dr. John A. Toomey of Cleveland, Ohio, which will be available within ten days. The recording is accompanied by slides and requires about thirty minutes. If the secretary of any county medical society or hospital staff would like to use this as a portion of the program for a coming meeting, kindly communicate with this office at 505 Bankers Trust Building, Des Moines, Iowa.

## FALL POSTGRADUATE MEDICAL COURSES

During the summer months the Speakers Bureau has been arranging several postgraduate medical courses to be held during the coming months. In September the Tama, Dickinson and Boone-Story County Medical Societies will resume their monthly postgraduate meetings and new courses will be opened by the Scott, Wapello, Montgomery and Carroll-Greene County Medical Societies. The Poweshiek County Medical Society will hold a series of weekly postgraduate medical lectures in Grinnell during October, which will be followed in November by a similar series held in Newton for the Jasper County Medical Society. The following schedule lists the September postgraduate lectures in chronological order:

## POSTGRADUATE MEDICAL LECTURES FOR THE MONTH OF SEPTEMBER

Davenport Lend-a-Hand Club 6:00 p. m.	September 2	The Differential Diagnosis and Therapy of the Leukemias Carl V. Moore, M.D., St. Louis
Red Oak Hotel Johnson 6:30 p. m.	September 2	Common Skin Diseases and Their Treatment Maurice H. Noun, M.D., Des Moines
Carroll St. Anthony Hospital 6:30 p. m.	September 4	Treatment of Heart Failure Clayton J. Lundy, M.D., Chicago
Ottumwa Hotel Ottumwa 6:30 p. m.	September 9	Immediate Treatment of Burns Harvey S. Allen, M.D., Chicago
Red Oak Hotel Johnson 6:30 p. m.	September 16	Treatment of Common Fractures Dwight C. Wirtz, M.D., Des Moines
Spirit Lake Antlers Hotel 6:30 p. m.	September 16	Treatment of Heart Failure Elmer E. Kottke, M.D., Des Moines
Davenport Lend-a-Hand Club 6:00 p. m.	September 18	Pituitary Disorders and Their Endocrine Treatment Elmer L. Sevringhaus, M.D., Madison
Jefferson Greene County Hospital 6:30 p. m.	September 18	*Fractures of the Wrist and Elbow Robert D. Schrock, M.D., Omaha
Ottumwa Hotel Ottumwa 6:30 p. m.	September 23	Peripheral Vascular Disease in General Practice Geza deTakats, M.D., Chicago
Boone Holst Hotel 6:30 p. m.	September 25	*Common Diseases of the Ear, Nose and Throat Sam E. Roberts, M.D., Kansas City
Traer Please-U Cafe 6:30 p. m.	September 25	The Management of Acute Cardiac Failure Daniel J. Glomset, M.D., Des Moines
Red Oak Hotel Johnson 6:30 p. m.	September 30	Common Diseases of the Ear, Nose and Throat Dean M. Lierle, M.D., Iowa City

(\*) Tentative

# WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*  
5822 North Waterbury Road, Des Moines

*President*—MRS. W. R. HORNADAY, Des Moines

*President Elect*—MRS. F. W. MULSOW, Cedar Rapids

*Secretary*—MRS. M. J. MOES, Dubuque

*Treasurer*—MRS. A. E. MERKEL, Des Moines

## A FOREWORD FROM THE PROGRAM COMMITTEE

In September most of the county medical auxiliaries will meet to make plans for a year of study and social activity. Since its organization the chief aim of the Woman's Auxiliary to the Iowa State Medical Society has been health education, the informing of the doctor's wife so that she can assist the medical profession by intelligent cooperation with it. May this year be no exception.

Today the word most frequently heard in America is "Defense". Conscious of the crisis which is upon us and eager to help carry out our country's defense plans, the National Program Committee has chosen for our consideration the subject "Nutrition". As a state auxiliary we shall gladly fall in line and undertake willingly the study of this important subject. Germany has long considered this part of her war program essential; Great Britain knows that an adequate diet is one of her major problems. The National Nutrition Conference for Defense held in Washington in May is a recognition of the importance of food to the health and strength of our nation. Now for the first time the United States has definite nutrition recommendations. Today the feeding of our people is a national problem.

In the next issue of the Woman's Auxiliary News the State Program Committee will present a group of topics with material sources as a suggested basis for each auxiliary group in working out a program suited to its particular needs. Some of the latest books on nutrition will be mentioned with the hope that every doctor's wife in Iowa will read at least one during the year. Well informed, she will be a national asset.

So that all of the News readers may know what our national president, Mrs. William Hibbitts, recommends for us in her excellent article, "The Doctor's Wife and Defense", published in the post-convention *Bulletin*, I shall paraphrase a few pertinent statements. Many people in the United States have inadequate diets which could be corrected if they were taught properly to take advantage of the available food. Even among the higher income groups there is malnutrition due to "vicious diet habits". She asks that every auxiliary have at least one nutrition forum this year for its own members, and that each organization ascertain from the State

Health Department if there are local nutrition problems. In addition to the study of nutrition, Mrs. Hibbitts advises that we know something about first aid and include lessons in our program. Because our mental health is of great importance in this period of stress and emergency we should provide a well-planned social program for the year.

In gathering materials for our program, we should keep in mind that the subject of foods has been used a great deal as a basis for propaganda by faddists and diet quacks who are seizing this opportunity to publicize their ideas. Realizing this danger, we must exercise extreme care to provide the most authentic information available.

This year let us strive to make our programs real *auxiliary* programs, not an imitation of those of other clubs to which we belong; meetings which are so vital and varied that they cannot help being interesting. Above all may they instruct in both individual and community health for "health is our first line of defense".

Mrs. Allan G. Felter, Chairman Program Committee

## COMMITTEES OF THE WOMAN'S AUXILIARY 1941-1942

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Dr. John G. de Bey.....	Orange City
Dr. Edward A. Hanske.....	Bellevue
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Mrs. John F. Veltman.....	Winterset
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Mrs. Isaac Sternhill.....	Council Bluffs
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Mrs. Wendell B. Sperow.....	Nevada

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Mrs. Elbert T. Warren.....	Stuart
Mrs. Edward A. Hanske.....	Bellevue
Mrs. Fred Moore.....	Des Moines
Mrs. Simon E. Lincoln.....	Des Moines
Mrs. Channing G. Smith.....	Granger

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Mrs. Millard T. Petersen.....	Atlantic
Mrs. William W. Stevenson.....	Rockwell City
Historian.....	Mrs. Edward L. Bower, Guthrie Center

## SPEAKERS BUREAU RADIO SCHEDULE

WSUI—Tuesdays at 8:00 p. m.

WOI—Wednesdays at 2:05 p. m.

Sept. 2- 3	Public School Health	Max L. Durfee, M.D.
Sept. 9-10	The Common Symptoms of Nervous Diseases	William E. Ash, M.D.
Sept. 16-17	The Physical Examination	August R. Anneberg, M.D.
Sept. 23-24	The Use of Vitamins	Herbert E. Stroy, M.D.
Sept. 30-Oct. 1	Eye Strain	Cecil C. Jones, M.D.

## IMPORTANT NOTICE

Extra copies of the postconvention issue of the *Bulletin* of the Woman's Auxiliary are available. You may begin your subscription with this issue if you desire. It is an interesting and valuable number, containing four of the major programs of the national organization which have to do with plans for home defense.

It is the plan of the national board to use the official publication to present all important material to the members of the Woman's Auxiliary. All issues of the *Bulletin* will contain, therefore, important programs and articles presenting information necessary for the efficient promotion of our Auxiliary projects.

Subscribers are entitled to four issues of the *Bulletin* for one dollar. Please use the subscription blank below, indicating the issue with which you wish your subscription to start.

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## SOCIETY PROCEEDINGS

### Greene County

Members of the Greene County Medical Society and their wives convened for a social meeting at the hospital in Jefferson, Thursday, August 14. Dinner was served at six-thirty after which Mary D. Black presented colored motion pictures.

John R. Black, M.D., Secretary

### Iowa and Illinois Central District Medical Association

The fall meeting of the Iowa and Illinois Central District Medical Association will be held Thursday, September 11, at the Ski Hi Ballroom at the Le Claire Hotel in Moline, Illinois. Following a six-thirty dinner, David B. Freeman, M.D., of Moline will give a short paper, illustrated with motion pictures, on Epithelioma of the Lower Lip. The principal address of the evening will be presented by Ralph A. Kinsella, M.D., professor of internal medicine, St. Louis University School of Medicine, St. Louis, who will speak on Endocarditis. The discussion of Dr. Kinsella's address will be opened by George Braunlich, M.D., of Davenport, and Harry W. Shuman, M.D., of Rock Island.

James Dunn, M.D., Secretary

### PERSONAL MENTION

Dr. William H. Megorden, who was graduated in 1938 from the State University of Iowa, College of Medicine, Iowa City, has located in Mt. Pleasant, where he has established an office. Dr. Megorden interned at the City Hospital in St. Louis, and for the past two years has held a residency at the Missouri Baptist Hospital in St. Louis.

Dr. Robert R. Foss of Missouri Valley has located in Remsen for the practice of medicine. He was graduated in 1940 from the State University of Iowa, College of Medicine, Iowa City, and completed his internship at the City Hospital in Cleveland, Ohio.

Dr. John H. Merrick who has practiced in Cherokee for more than twenty years, has moved to Maxwell, where he will open an office.

Dr. Ralph H. Heeren, assistant professor of hygiene and preventive medicine, State University of Iowa, College of Medicine, Iowa City, has resigned from the faculty to accept a similar position at the Tulane University of Louisiana, School of Medicine, New Orleans.

Dr. J. Stuart McQuiston of Cedar Rapids spoke for the Davenport Rotary Club, Monday, August 18, on "Heart Disease in the Business Man."

Dr. Alexander A. Johnstone of Keokuk, on furlough from Camp Robinson near Little Rock, Arkansas, was guest speaker for the Keokuk Rotary Club, Thursday, July 17. His talk dealt with the work of the medical corps in the camp.

Dr. William E. Hungerford has arrived in Logan where he will take over the practice of Dr. Glen E. Burbridge who is in military service at Camp Benning, near Columbus, Georgia. Dr. Hungerford was graduated in 1940 from Creighton University School of Medicine, Omaha, and completed his internship at St. Catherine's Hospital in Omaha.

Dr. Merlin A. Schrader of Webster City has located in Jewell where he will be associated in the practice of medicine with Dr. Ernest W. Slater. Dr. Schrader was graduated in 1940 from the State University of Iowa, College of Medicine, Iowa City, and served his internship at the General Hospital in Nashville, Tennessee.

Dr. Kenneth L. McGuire, son of Dr. Roy A. McGuire of Fairfield, will enter the practice of medicine in Richland. He was graduated in 1940 from the State University of Iowa, College of Medicine, Iowa City, and spent the past year in Spokane, Washington, where he interned in the Sacred Heart Hospital.

Dr. Varina DesMarias has opened offices for the practice of medicine in Grundy Center, the first woman physician to practice in Grundy County. She was graduated in 1940 from the State University of Iowa, College of Medicine, Iowa City, and completed her internship at the Huron Road Hospital in Cleveland, Ohio.

Dr. Edwin C. O'Connor who has practiced in Alta Vista for several years has located in New Hampton where he will be associated with Dr. Merle J. McGrane.

Dr. Nathan Blackman, staff member of the State Hospital at Worcester, Massachusetts, has arrived in Clarinda to assume his duties as clinic director of



the Clarinda State Hospital. Dr. Blackman was graduated in 1936 from the Université de Paris Faculté de Médecine, and interned at Bassett Hospital, Cooperstown, New York.

Dr. Fred Sternagel of West Des Moines announced the association of Dr. Eugene C. Penn with him in the practice of medicine. Dr. Penn was graduated in 1940 from Loyola University School of Medicine, Chicago.

Dr. Whitney H. Missildine who has practiced for the past year in Eagle Grove, has moved to Iowa City, where he will become a staff member of the State University of Iowa, College of Medicine, in the department of neurology.

Dr. Edward Panzer has located in Stanton, where he will succeed Dr. Fred A. Hansen, who moved to Red Oak some time ago. Dr. Panzer was graduated in 1939 from the University of Nebraska, College of Medicine, Omaha, and for the past two years has been interning at the Methodist Hospital in Omaha.

Dr. William E. Hart who has practiced medicine in Odebolt for the past twenty years, is retiring from active practice. He has disposed of his practice to Dr. Roy G. Klockseim, who comes to Odebolt from Newton. Dr. Klockseim was graduated in 1939 from Rush Medical College, Chicago, and interned at the Iowa Methodist Hospital in Des Moines.

Dr. James P. Sharon of Fort Dodge has been appointed State Venereal Disease Director by the Nebraska State Department of Health, with headquarters in Lincoln. Dr. Sharon was formerly associated with the Iowa State Department of Health in Des Moines, and more recently has been medical director at Fort Leonard Wood, Rolla, Missouri.

Dr. Rodney C. Wells of Marshalltown and Dr. Ralph E. Smiley of Mason City are two Iowa coroners who are scheduled to participate in a round table discussion of "How to Improve the Standards and Modernize the Coroner's Office." The symposium is in connection with the the National Association of Coroners Annual Convention to be held at the Edgewater Beach Hotel in Chicago, September 15, 16 and 17.

#### MARRIAGES

Miss Beulah Shinn of Neenah, Wisconsin, and Dr. Claire H. Mitchell of Indianola were married Thursday, August 7, at the Methodist Church in Indianola. After a two weeks' trip to Chicago and Wisconsin

they returned to Indianola where Dr. Mitchell has been engaged in the practice of medicine for several years.

The marriage of Miss Elizabeth Helen Moorhead of Fairfield and Dr. Lancelot W. Eller of Kanawha took place Friday, August 15, at the home of the bride's parents in Fairfield. Following the ceremony and reception the young couple left for a wedding trip through northern Minnesota and Canada. After September 1 they will be at home in Kanawha, where Dr. Eller has been practicing for the past four years.

Miss Lucille Sheppard of Des Moines and Dr. Roy G. Klockseim of Newton were married Saturday, July 19, in the chapel of the First Methodist Church in Des Moines. Mrs. Klockseim was graduated from the Iowa Methodist Hospital School of Nursing. Dr. Klockseim was graduated in 1939 from Rush Medical College, Chicago, and served his internship at the Iowa Methodist Hospital in Des Moines. For the past year he has been associated with the Newton Clinic in Newton. The couple will make their home in Odebolt where Dr. Klockseim has just entered the private practice of medicine.

#### DEATH NOTICES

Engle, Harry Perry, of Newton, aged sixty-eight, died August 5 as the result of a paralytic stroke which occurred July 19. He was graduated in 1898 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Jasper County Medical Society. A more complete obituary will be found in the History of Medicine section of this issue of the JOURNAL.

Naae, Thorleif T., of Graettinger, aged seventy-nine, died August 5 after an illness of two years. He was graduated in 1900 from the Keokuk Medical College, College of Physicians and Surgeons, and at the time of his death was a Life Member of the Palo Alto County and Iowa State Medical Societies.

Simeral, Fred Ernest, of Brooklyn, aged sixty-two, died August 15 after an extended illness. He was graduated in 1909 from the University of Missouri School of Medicine, Columbia, and at the time of his death was a member of the Poweshiek County Medical Society.

Wagner, William Christian, of Traer, aged sixty-nine, died suddenly July 20 after a heart attack. He was graduated in 1903 from the University of Illinois, College of Medicine, Chicago, and at the time of his death was a Life Member of the Tama County and Iowa State Medical Societies.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. TOM B. THROCKMORTON, Des Moines

DR. JOHN T. MCCLINTOCK, Iowa City

DR. WALTER L. BIERRING, Des Moines

DR. R. T. LENAGHAN, Clinton

DR. HENRY G. LANGWORTHY, Dubuque

## The Medical History of Palo Alto County

*Prepared by*

CLARA ANTOINETTE RASMUSSEN, B.A.

Ruthven, Iowa

(Continued from last month)

The year of 1878 marked a turning point in the physical growth of the county. The completion of the Milwaukee railroad brought many new settlers into this region. Prominent medical men from the east and even from Europe came here to fish and hunt game. Many of them bought extensive tracts of land. A celebrated surgeon, Dr. Fitzgerald, from Dublin, Ireland, visited in Emmetsburg with friends. He was at that time surgeon oculist to the Queen of England. Another European physician, Dr. A. Graettinger, a native of Germany, came from Milwaukee and bought extensive land interests north of Emmetsburg. It is not known for certain if he actually practiced here but his name was listed as a resident physician in an old county pamphlet. The town of Graettinger was named in his honor.

Dr. Seldon Cady arrived from Wisconsin and located in Emmetsburg in 1879. There is no record of his medical training. His professional card gave attention to his ability in handling surgical diseases and diseases of women and children. A few years after his arrival at Emmetsburg the local papers stated that he had secured a pension of twenty-five dollars a month with an additional \$4,800 as back payment from the government. From this fact it is assumed that he was a Civil War veteran. Most of his practice seemed to center in the western part of the county in the vicinity of Ruthven where the malignant diseases held sway for some time.

Before the coming of the Milwaukee railroad, Ruthven was the only settlement in the western part of the county. Two physicians located here for a short time. The first physician to locate at Ruthven was Dr. Teal who owned and operated the first drug store in town. It is believed that he came from Wisconsin as a Civil War veteran.

A rather shy and unassuming individual, Dr. Teal experienced difficulties with the outlaws who drifted to this part of the county. His pony and two-wheeled cart were often seen joggling over the rough and muddy roads as he made his way on his many sick calls. The numerous ponds, lakes and swamps were responsible for the epidemics of diphtheria, measles and malaria which resulted in several deaths of young and old alike. The doctor's wife died and being left alone shortly after his only daughter's marriage, Dr. Teal returned to Wisconsin in 1882.

Dr. Beebie, a clergyman-physician, practiced in Ruthven for a short time. His eagerness to reform the ruffians met with reverses. He finally left here for an unknown destination.

Such were the varied lives of our early pioneer doctors of Palo Alto County. It is they whom we hold in honored memory, in recognition of their untiring efforts under physical handicaps unknown to later generations. Truly they deserve a place worthy of permanent record.

### PERIOD OF DEVELOPMENT FROM 1880 TO 1910 THE HORSE AND BUGGY ERA

Time marches on! Medical progress made a few strides in this period of historical development. This era introduced the much respected and beloved "family doctor" which brings to mind the famous painting, entitled "The Doctor". Many of us may have experienced the same relationship between patient and doctor during the days of our childhood. "I did it to even the least of these" gives silent testimony of the old doctor's faithfulness in the hour of grief that endeared him to the families he served.

During the early and middle eighties, Palo Alto county experienced numerous epidemics. Diphtheria proved to be the most fatal disease with



scarlet fever just as prevalent but less fatal. The latter disease became especially prevalent in Ruthven and vicinity when a call was sent out for a physician. Measles added its quota to the casualty list. Pneumonia became a frequent complication. Smallpox flourished also but the medical profession knew how to combat it successfully. Vaccination was already known but practiced in a crude way. Infections developed frequently which caused much skepticism. The numerous lakes and ponds in this county gave rise to much malaria. Fracture work and obstetrics constituted the two greatest services rendered by the medical profession of this era. "To cure sometimes, to relieve often, to comfort always," became the watchword of the family doctor.

The latter part of this era introduced the more scientifically minded physician. It became the accepted custom for members of the medical profession to attend Polyclinics at Chicago and New York. Being eager to share their knowledge with other colleagues they organized the first Palo Alto County Medical Society in 1895. Several of our physicians had studied under such leading medical lights as Jaggard, Fenger, Adler and others. This wholesome influence served to raise the standards of the medical profession in general. As a result the irregular practitioners and quacks disappeared from our county "like the mist before the dawn."

From 1880 to 1882 Palo Alto county had the honor of receiving into its midst three outstanding physicians who located at Emmetsburg and Ruthven. Coming here shortly after their graduation from medical school these men practiced in our county until death removed them after more than four decades of medical service. These physicians and surgeons were: Dr. James C. Davies, Dr. H. A. Powers and Dr. Gilbert Baldwin. These unique characters gave the best years of their lives to the people of their respective communities. Possessing highly trained minds and strong physiques these noble men were enabled to withstand the hardships of the horse and buggy days. They were active in community affairs adding a dash of color here and there that left a deep and lasting impression. In the practice of medicine they kept abreast of the times, ever alert for the latest in medical discoveries. They developed the ability to act quickly, accurately and energetically. Obstetrics and fracture work became their main specialties. The records disclose the fact that Dr. Baldwin and Dr. Powers attended most of the births in the county from the early eighties until 1910.

Dr. James Charles Davies, an outstanding surgeon of Palo Alto county, was borne at Wilkes-Barre, Pennsylvania, November 14, 1856. During

his later boyhood days he moved with his family to Independence, Iowa, where his father, William Davies, became a meat merchant. There was a large family of boys and girls. Young James attended the State University of Iowa, graduating from the College of Medicine in June of 1880. Later he took special postgraduate work in surgery in New York. In the fall of 1880 he located at Emmetsburg on the recommendation of Dr. Reynolds, superintendent of the Hospital for the Insane at Independence. Recollections reveal that as Dr. Davies walked from the depot at Emmetsburg to the hotel he witnessed three fist-fights. The doctor decided then and there that Emmetsburg would be a good location for the practice of surgery.



DR. J. C. DAVIES  
Emmetsburg, Iowa  
1856-1918



Dr. Davies holds the distinction of being the first surgeon in this county and possibly in the state to use antitoxin for diphtheria. In dispatching a telegram to Chicago for the serum, Dr. Davies had to pay twenty-five dollars for one-fourth of a bottle. Upon the arrival of this antitoxin the doctor rushed to the home of a German family where he saved the lives of several children ill with diphtheria.

Although a student and a profound reader, Dr. Davies found time to pass on his knowledge to the young men who planned to enter the field of medicine. Dr. J. L. Van Gordon, an Emmetsburg boy, received his preliminary training under the supervision of Dr. Davies, later completing his medical training at the University of Iowa. Dr. C. H. Souder, a young German doctor from Ken-

tucky, became associated in practice with Dr. Davies for a short time as did also the latter's friend and classmate, Dr. H. A. Powers.

Dr. Davies married Cecelia Geiser who had been a nurse before her marriage. Three children comprised the family, two sons and one daughter. The oldest son is now a mining engineer.

The doctor adhered to the Methodist faith and to the Republican party principles. The Masonic Lodge and the Knights Templar claimed him as one of their active members. He was especially fond of horses and knew how to handle the wildest of them. His presence of mind once saved him from losing his fine team in Silver Lake Creek although he received a thorough soaking himself.

For several years he practiced at Waterloo, Iowa, and Boise, Idaho, after which he returned to Emmetsburg where he passed away, March 21, 1918.

Another outstanding physician, Dr. Henry Arthur Powers, located at Emmetsburg in the spring of 1882. He was born in Dubuque, Iowa, March 15, 1856, and was the son of P. H. and Catherine Powers. His early life was spent on the farm home in Buchanan county near Jesup, Iowa, where he attended the rural schools. He was graduated from the Jesup High School and taught school for about four years. While being employed at the State Hospital for the Insane at Independence he became interested in the study of medicine. In the fall of 1879 he entered the Medical School of the State University of Iowa where he was graduated in 1882. That year he located in Emmetsburg where he remained until his death forty-six years later.

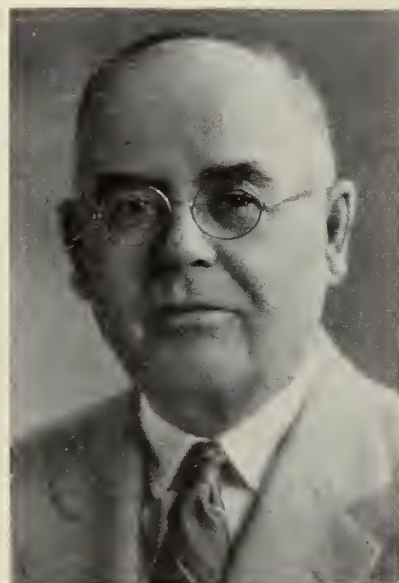
Dr. Powers was married twice; first in 1885 to Miss Anna Roberts of Emmetsburg. To this union two children were born, namely, Catherine Mildred (Mrs. W. S. Buehrt of Buffalo, New York), and Dr. Henry Roberts Powers, who was associated with his father in the practice of medicine before his death. Mrs. Powers died in 1895. Dr. Powers was again married in 1898 to Sarah Catherine Lamborn of Bellevue, Iowa. One child, Dr. Harold W. Powers, was born to this union. He is now an eye, ear, nose and throat specialist in Topeka, Kansas.

In 1898 Dr. Powers took postgraduate work at the Polyclinic Hospital in Chicago. Fracture work and obstetrics constituted his outstanding achievements. He patted the women on the back, baptized and weighed the babies and in general exemplified the spirit of good will and friendliness. His gracious smile cheered many a burdened soul along life's highway. Dr. Powers truly enjoyed his work. No service was too great but

he welcomed it gladly and braved the storms of the early days to serve his patients.

In community affairs, Dr. Powers rated as a first class citizen. He served as a member of the school board during the years from 1895 to 1911. For the years of 1902 to 1905 he acted as president of the school board. He became identified with several fraternal organizations in the city of Emmetsburg. During the World War he served as Examining Physician for the Draft Board.

Having served his community as its outstanding family physician for forty-six years, Dr. Powers exchanged this world for the other on May 14, 1928. He bequeathed a fine progressive physi-



DR. H. A. POWERS  
Emmetsburg, Iowa  
1856-1928



cian and surgeon to the profession in the person of his son, Dr. H. Roberts Powers, who is carrying on the family traditions.

An eminent physician and surgeon of the county was Dr. Gilbert Baldwin who located at Ruthven in the spring of 1882. Dr. Baldwin was born at Pickawick, Minnesota, on October 23, 1859, as the youngest son of Jarel and Lucy Beach Baldwin. He received his early education in the schools of Iowa at Oelwein, Davenport, Dubuque and Burlington. In 1882 Dr. Baldwin came to Ruthven in response to a call for a doctor when deaths were mounting because of an epidemic of scarlet fever.

On March 30, 1904, Dr. Baldwin was married to Miss Bessie Larson, a pioneer school teacher and one-time Palo Alto County superintendent of schools. His only son, Perry Baldwin, a railroad conductor on the Pacific Northwest Railway,



died one month following the death of his father at Seattle, Washington.

In every enterprise for the benefit of the community, Dr. Baldwin displayed an active and progressive spirit. He was an Episcopalian, a thirty-third degree Mason, and a member in good standing of numerous fraternal and civic organizations in the county and state. His ability to feel at home in any mixed group made him popular with all kinds of people. He loved to strut about in full dress in order to attract the attention of others. His desire to do the unusual things were expressed in his ability to swim across Lost Island Lake, to play a good game of tennis, and to sing with gusto "The Christening at Tipperary" at any social function.



DR. GILBERT BALDWIN  
Ruthven, Iowa  
1859-1921

Throughout his professional life, Dr. Baldwin rated high among his colleagues. Besides being affiliated with the local and state medical societies, he was a member of the Association of Railroad Surgeons, having served the Chicago, Milwaukee and St. Paul Railroad, and the Minneapolis and St. Louis Railroad as surgeon for more than thirty-five years. Closely associated with him in practice was Dr. T. H. Livingston during the years of 1888 and 1889. In 1892 Dr. Baldwin became associated with Dr. H. M. Huston in the practice of medicine. This pleasant and agreeable partnership continued for thirty years, a friendship of honor and faith in one's fellowman that was never broken until the death of Dr. Baldwin which occurred at Ruthven, December 16, 1921. His sudden death was caused by an

acute heart attack following the cranking of a refractory Ford car.

Possessing a keen mind and a large and very strong physique, Dr. Baldwin was enabled to withstand the rigors of a hard life during the horse and buggy days. For decades he never refused a sick call. The people used to say, "He always leaves more than he takes." His charity and innate kindness toward all classes of people made him a thorough democrat. He shared with the late Dr. Powers the honor and distinction of having ushered into the world thousands of Palo Alto county babies even to the second and third generations. The writer's arrival into this world was safely negotiated by Dr. Baldwin who served as one of the members of the reception committee. In saving the life of a tiny red-headed babe he made it possible for this history to be written.

Stainless in patriotic purpose and great in the splendor of his genius, he fed the hungry, clothed the naked and spread a wholesome influence over our community life. Such was the varied life and character of a noble doctor who left a deep and lasting impression which will abide throughout the years.

There is a group of four veteran physicians in Palo Alto county who have practiced medicine in each of their respective communities for nearly half a century. These rugged individualists came to this county after their graduation from medical school in the early and later nineties and are still going strong. With the passing of the years they have witnessed many changes in the medical profession without having lost the cultural stamp of the Old School. Their many and varied experiences of a full life have enriched them spiritually. They possess a distinct charm and a kindly spirit which endear them to the people they have served.

With due honor and respect we salute the following veterans. Dr. Herbert Marc Huston who holds the unique position of being the first and only physician to practice in this county continuously for nearly five decades. Dr. James Warren Woodbridge of Emmetsburg shares second place as veteran in service with Dr. Edward D. Beatty of Mallard; they arrived here together in July of 1895. Dr. Th. T. Nae, the oldest physician in the county, came to Graettinger in 1900.

Associated in practice with the late Dr. G. Baldwin for nearly thirty years, Dr. H. M. Huston arrived at Ruthven in March of 1892. Herbert Marc Huston was born at Marengo, Iowa, November 8, 1870. He was the oldest son of Dr. William Langford and Susan Ann Huston. His early education was received at Marengo where his father, a Civil War veteran, practiced medicine during the pioneer days of Iowa county. Dr.

Huston is a graduate of the Illinois Wesleyan University, Bloomington, Illinois, and the Medical College of the State University of Iowa with the class of 1892. He has also taken postgraduate work at the Chicago Polyclinic Hospital.

Partly through the influence of Professor Shrader of the State University of Iowa, Dr. Huston decided to look over the location prospects in northwestern Iowa. Shortly after the completion of his medical studies he came here to fish and hunt for a few weeks and made a permanent choice at the request of the late Dr. Baldwin. With the exception of military service during the Spanish-American War and the World War, Dr. Huston has practiced here continuously for forty-nine years, a record which no other physician has ever held in the history of Palo Alto county. He has truly had a very strenuous life and is still at his post of duty. Like an old sea-captain he will not give up the ship!



DR. H. M. HUSTON  
Ruthven, Iowa  
1870—

The finest example of loyalty and true friendship existed between Dr. Huston and the late Dr. Baldwin. Widely different in tastes and outlook these two men enjoyed a pleasant and profitable association of medical practice which lasted until death severed the connection. Together they shared the hardships of the horse and buggy days. Promptness and resourcefulness constituted the outstanding qualities which made for their success. Since the passing of his associate, Dr. Huston has carried on alone for nearly twenty years. He spares no efforts in giving the best of medical services to poor and rich alike.

(To be continued next month)

## HARRY PERRY ENGLE, M.D. 1872-1941

At the close of an office hour and after a friendly game of chess, the final illness of our friend Dr. Harry Perry Engle occurred suddenly, and he passed away August 5, 1941, at the Skiff Memorial Hospital, Newton, Iowa.

Dr. Engle was born in Newton, Iowa, November 12, 1872, the son of Dr. Perry Engle, a pioneer Iowa physician, author, journalist and legislator. An alumnus of Newton High School and Newton Normal College, he later was graduated from the State University of Iowa, College of Medicine with the class of 1898. Following a year's graduate work in eye, ear, nose and throat diseases in Chicago and further specialized study in Vienna, Austria, he became assistant surgeon for the Iowa School of the Blind at Vinton, and later returned to the Newton Normal College in the capacity of instructor in physiology and hygiene.

He was a member of the Jasper County Medical Society, the Iowa State Medical Society, and the American Medical Association; a member of the American Academy of Ophthalmology and Otolaryngology and of the International Congress of Ophthalmology; and a staff member of the Skiff Memorial Hospital, Newton. He was loyal in fraternity, being a Knight of Pythias, an Elk, a Mason, a Shriner, and a member of Sigma Nu, social fraternity. His widow, the former Shirley Mann, and a daughter, Dorothy (Mrs. Robert W. Gould), survive.

When the memoirs of those who have "kept the faith" in organized medicine are written, his will be among them. He has been honored by election to many positions of trust and responsibility. He served as president of the Jasper County Medical Society, and for many years he held, and very efficiently so, the offices of secretary of the Jasper County Medical Society, deputy councilor, and delegate to the annual meeting of the Iowa State Medical Society. Representing his fellows he regarded as a solemn obligation. Exhibiting rare judgment in decision, few members enjoyed the confidence of their colleagues as did he. Well did he know the power and worth of organized medicine.

In his specialty of eye, ear, nose and throat diseases, he enjoyed a large following and met with unusual success over a long period of years. Dr. Engle possessed a well-disciplined mind. He discarded state formulas. His standards of mind and character stood the tests to which the life of a physician is subjected. Being optimistic by nature, diplomatic in discussion and tactful in conclusion, his views in organization were often sought. In his home community he was kind, unassuming, gentle, courteous, loyal to his friends and considerate of those who differed with him. His life's work seemed unfinished. A true disciple of Aesculapius has passed on. We pause to pay tribute to him for his sterling qualities, worthy of emulation.

James C. Hill, M.D.



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY**—By Forrest R. Davison, M.Sc., Ph.D., assistant professor of pharmacology, School of Medicine, University of Arkansas. The C. V. Mosby Company, St. Louis, 1940. Price, \$5.00.

**THE 1940 YEAR BOOK OF PEDIATRICS**—Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1941. Price, \$2.50.

**METHODS OF TREATMENT**—By Logan Clendening, M.D., and Edward H. Hashinger, M.D., medical department of the University of Kansas. Seventh edition. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.

**PHYSICAL DIAGNOSIS**—By Ralph H. Major, M.D., professor of medicine, University of Kansas. Second edition, revised. W. B. Saunders Company, Philadelphia, 1940. Price \$5.00.

**VITAMIN THERAPY IN GENERAL PRACTICE**—By Edgar S. Gordon, M.D., associate in medicine, and Elmer L. Severinghaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1940. Price, \$2.75.

**TECHNIC OF CONTRACEPTION CONTROL**—By Robert L. Dickinson, M.D., and W. E. Morris, M.D. The Williams and Wilkins Company, Baltimore, 1941. Price, fifty cents.

**MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE**—Edited by Philip Bard, professor of physiology, Johns Hopkins University School of Medicine. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.

**THE 1940 YEAR BOOK OF GENERAL THERAPEUTICS**—Edited by Oscar W. Bethea, M.D., professor of clinical medicine, Tulane University School of Medicine. The Year Book Publishers, Chicago, 1941. Price, \$2.50.

**PROCTOLOGY FOR THE GENERAL PRACTITIONER**—By Frederick D. Smith, M.D., formerly associate in proctology, Graduate School of Medicine, University of Pennsylvania. Second revised edition. F. A. Davis Company, Philadelphia, 1941. Price, \$4.50.

**HOW TO PREVENT GOITER**—By Israel Bram, M.D., Philadelphia. E. P. Dutton and Company, 300 Fourth Avenue, New York, 1941. Price, \$2.00.

**CLINICAL PELLAGRA**—By Seale Harris, M.D., professor emeritus of medicine, University of Alabama. The C. V. Mosby Company, St. Louis, 1941. Price, \$7.00.

**THE DOCTOR AND THE DIFFICULT CHILD**—By William Moodie, M.D., Medical Director, London Child Guidance Clinic. The Commonwealth Fund, New York, 1940. Price, \$1.50.

**TEXTBOOK OF PEDIATRICS**—By J. P. Crozer Griffith, M.D., emeritus professor of pediatrics, University of Pennsylvania; and A. Graeme Mitchell, M.D., professor of pediatrics, University of Cincinnati. Third edition, revised and reset. W. B. Saunders Company, Philadelphia, 1941. Price, \$10.00.

**HEMORRHAGIC DISEASES**—By Kaare K. Nygaard, M.D., former fellow in surgery, The Mayo Foundation. The C. V. Mosby Company, St. Louis, 1941. Price, \$5.50.

## BOOK REVIEWS

### TEXTBOOK FOR MALE PRACTICAL NURSES

By Gayle Coltman, R.N. The Macmillan Company, New York, 1941. Price, \$2.00.

This book is offered without mention, on the title page or elsewhere, of the author's qualifications or of the institution in which he works. The degree, R.N., is not in itself sufficient to convince a reviewer that an author is qualified to publish a text on a subject related to the medical sciences. The title, "Textbook for Male Practical Nurses", is a misnomer. A textbook is a book used by a teacher or class as a basis of instruction or study. Since practical nurses do not receive organized class instruction, there seems to be no need for a textbook for practical nurses. Nursing, like medicine, cannot be mastered by reading a book on the subject.

The volume is an outline of the elementary principles and details of nursing. At times, however, the author ventures a discourse on the diagnosis, treatment and prognosis of disease.

R. F. B.

### HOW TO PREVENT GOITER

By Israel Bram, M.D., Philadelphia. E. P. Dutton and Company, 300 Fourth Avenue, New York, 1941. Price, \$2.00.

This book, written for lay perusal, is really an informal discussion of most of the diseases of the thyroid gland. It is well written; great care has been taken to avoid technical discussions. There are few illustrations and most of these are of the "before and after" type.

Probably very few internists and surgeons will

endorse the author's views on the treatment of thyroid disease. He states and repeatedly emphasizes that surgical treatment of exophthalmic goiter is seldom, if ever, necessary. Highly controversial also are his views on the use of iodine in the treatment of simple colloid goiter.

For these reasons the book will probably not prove useful to the physician in helping his patient understand diseases of the thyroid gland.

D. J. H.

### THE THERAPEUTICS OF INTERNAL DISEASES, VOLUME III

Edited by George Blumer, M.D., clinical professor of medicine, Yale University School of Medicine. D. Appleton-Century Company, New York, 1941. Price, \$10.00 per volume, \$40.00 per set.

In this recently published third volume of a series written by various contributors, and edited by Dr. Blumer, the discussion of various infections is continued.

Chapter I is on "Diseases due to Fungi" by David T. Smith, M.D., and contains brief but rather thorough discussions of the various forms of pathogenic fungi, the pathology produced in the human, and an evaluation of treatment in the different types of infection. The chapter in itself would form a helpful little monograph on this subject. Chapter II concerns "Metazoan Diseases" and the various types of parasitic worms are discussed rather fully. Chapter III is concerned with "Protozoan Diseases" in which the various types of malaria, amebiasis, trypanosomiasis, and other disease forms, are covered.

There follow chapters on intoxications, in which bites of poisonous reptiles, and food intoxications are discussed, and diseases due to physical agents in which treatment of disease due to heat, cold, pressure, asphyxia, electric shock, radium and physical trauma is adequately discussed. The chapter on edema, dehydration, acidosis and alkalosis is presented very thoroughly and clearly. It is thought that a few simple diagrammatic line drawings might improve this chapter and render it somewhat more clear to those who learn better by visual aids. The section on preoperative and postoperative treatment is very well written. It includes a discussion of traumatic shock, acute intestinal obstruction and increased intracranial pressure.

In a well written chapter on treatment of diseases of the lower respiratory tract, Donald S. King, M.D., devotes considerable attention to those diseases which are usually passed over rather briefly in most textbooks. A section on the anatomy and physiology of the lungs is most welcome and considerable space is devoted to special treatment of the various forms of chronic lung disease. Pulmonary abscess, bronchiectasis, empyema, fungus infection, tumor and pulmonary vascular conditions are thoroughly discussed. This is one of the most helpful chapters in the entire volume.

A discussion of treatment of diseases of the blood and lymph vessels is presented by Irving S. Wright, M.D., and constitutes a thorough epitome of present day knowledge of various vascular disorders. The last chapter in the book is on treatment of heart disease and heart failure by H. M. Marvin, M.D., and covers this field exceptionally well in view of the limited space allotted to the author.

The book as a whole would constitute an excellent text and reference work for the busy practitioner, who not only wishes to find his information on treatment brief and to the point, but also thorough in detail. A few of the chapters, as already indicated, would make excellent monographs in their own right. The book is really a helpful addition to the textbook library.

J. C. P.

#### THE DOCTOR AND THE DIFFICULT CHILD

By William Moodie, M.D., Medical Director, London Child Guidance Clinic. The Commonwealth Fund, New York, 1940. Price, \$1.50.

This is a little book of 214 pages which deals with emotional and habit problems of childhood in non-technical language. It is a very sane and practical volume which should be of real value to the general practitioner and the pediatrician in the solution of emotional problems encountered in daily practice.

The first part of the book is devoted to a consideration of the recognition of the problem, a study of the problem, which includes the history and examination and the treatment of the difficult child. Part Two discusses in detail the various

problems of behavior and habit. The author states that in the treatment of the ordinary case the exact nature of the symptoms is not as important as the discovery and treatment of the underlying need which has provoked the symptoms. The three basic needs for every child are the need for work, security and affection, and in the vast majority of cases the behavior problems may be explained on the lack of one of these three basic needs.

D. K.

#### THE 1940 YEAR BOOK OF PEDIATRICS

Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1941. Price, \$2.50.

This is the fortieth edition of this annual publication. It is a classical review of the literature of pediatrics for the year, and its publication is looked forward to by every one interested in pediatric literature.

The pertinent remarks by the editor in commenting on various articles constitute one of the finest contributions to this annual publication. A special article by the editor on the treatment of pneumonia is one of the features of this edition. The contributions to the pediatric literature for the year are presented under the usual classifications of the newborn, infant feeding, infectious diseases, etc.

For the busy physician the annual year book is an opportunity to keep abreast of progress in specialized fields of medicine.

D. K.

#### THE MASK OF SANITY

By Hervey Cleckley, M.D., professor of neuropsychiatry, University of Georgia, School of Medicine, Augusta. The C. V. Mosby Company, St. Louis, 1941. Price, \$3.00.

Most psychoses and neuroses allow of some fairly reasonable explanation. However, psychopathic personality, the black sheep in the family of psychiatric diseases, has thus far resisted all efforts at explanation or delimitation on either a physical or psychogenic basis.

Dr. Cleckley in this monograph has collected a number of typical case histories of psychopathic personality and has subjected them to an exhaustive and critical analysis, separating from the group all other neurotic and psychotic conditions and attempting to find and describe symptoms common to all psychopaths. Apparently despairing of a terse definition, the author, by descriptions, comparison with other neurotic types and by limitation gives one a clear conception of what is and is not true psychopathic personality.

While no cure or even satisfactory management of this most troublesome condition is offered, the acceptance of Dr. Cleckley's criteria and his etiologic hypotheses will promote an understanding of the condition and coherence in its further study and discussion.

R. C. D.



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### PERSISTENCE OF FUNCTION OF SKIN GRAFTS THROUGH LONG PERIODS OF GROWTH\*†

JAMES BARRETT BROWN, M.D., and  
FRANK McDOWELL, M.D., St. Louis, Missouri

Function has been found to persist in large skin grafts that have been in place during long periods of growth and the fundamentals that have proved of value in carrying out large surface repairs are reviewed here.

Both thick split and full thickness grafts do seem to grow, or at least stretch out, with growth of the body area and to permit normal movement, if they have been successful from the start. This has been true in many patients and over areas of the body from the face to the feet (Figs. 1 to 10).

There is a condition that may be called *generalized skin shortening* of an area in which there is no evident distortion but a definite lack of flexibility and ease of function. This may result from failure of releasing the scar sufficiently or

from growth of the area without enough enlargement of original grafts. The condition may be likened to clothes that are too tight or it may be said that the skin envelope is too small. This means that *scar and its contracture persist until released*; if it is completely released early in life, the repair should last; if, with increased growth, the shortening does appear, then more skin can be let in by simply opening the tightest area, allowing the edges to retract and filling the resultant defect with suitable grafts. Where the scar tissue is very thick, however, the edges will not retract when opened and then large areas have to be excised down to good soft tissue and still larger grafts applied (Figs. 6 and 10).

By *satisfactory late function of the grafts* is meant: (1) enough skin for free movement; (2) moderate looseness; (3) ability to withstand the usual trauma of getting around; (4) the development of normal sensation. Full normal sensation usually develops in free skin grafts and is influenced by the amount of deep scar that is left and, of course, is dependent on there being sensory nerves in the area.

*Metaplasia* of grafts (and flaps also) does not

\*From the Department of Surgery, Washington University School of Medicine, St. Louis, Missouri.

†Reprinted from Surgery, Gynecology and Obstetrics, May, 1941. Part of a presentation before the Wapello and Polk County Medical Societies.



Fig. 1. Extreme deformity of neck and jaw corrected in 2 thick split graft and 1 full thickness graft operations. Recorded after an 8 year period of growth with complete restoration of contour. Surface smoothness can be improved with further grafts when patient wishes. Both axillae also repaired.

take place and, therefore, a really normal sole of the foot, for instance, cannot be restored. This area is specialized to the point of being an organ; the skin and subcutaneous tissues are different from birth and the peculiar bearing qualities are not developmental. A graft or a flap on a sole may make calluses (or even annoying warts) but it will not metaplast into true skin or subcutaneous tissue of the area. They always have to be protected and the wart formation guarded against (Figs. 4 and 9). If hair is transplanted, it will continue to grow, except that it may be worn off.

Skin grafts transplanted to normal mucous membrane surfaces, such as the mouth, larynx, and eye socket, show no evidence of a change to a mucous membrane. The skin simply persists as such and even raises hair in these areas if there are any functioning follicles in the graft.

*The results of grafting vary in different regions and with the type of lesion.* A graft put on a soft base with a good blood supply can be expected to be more certain than if put over the shin or ankle where there is little deep pad to help absorb shocks and trauma. Likewise, an old x-ray burn or leg ulcer with deep and surrounding fibrosis and lack of resiliency of the tissues cannot afford as good a bed or area for a graft as a simple burn. Old chronic leg ulcers with deep scarring and edema tend to recur, so that improvement of local circulation is necessary if the repair is to prove efficient; the graft itself, of course, may assist in this. A frequent cause of loss of grafts applied for long-standing fibrosed ulcers



Fig. 2. Difficult contracture of mouth and neck, repaired with three thick split grafts from clavicle to level of nose. Contour has remained satisfactory after 13 year growth period.

is failure to remove the scar down to soft tissue; one should avoid denuding bone or tendons in the process, however.

Although grafts and flaps are not being compared, a successful graft may be more apt to continue satisfactorily throughout a growing period than a pedicle flap, because flaps have a tendency to hump up and become heavy from fat rather than to spread out.

*Cosmetic results* with free skin grafts may not be as good as the functional results described. What would be a good functional result on a leg or axilla would be a very poor one on the face, because of roughness and pigmentation. However, the same general rule applies for a late, desirable cosmetic result as for function; if the



Fig. 3. Marked distortion and jaw twisted down into open bite; corrected in 2 split graft and 2 full thickness operations. Normal profile and occlusion of teeth resulting and recorded a second time after 10 year period of growth.





Fig. 4. Replacement in 1 operation with a full thickness graft of entire palmar surface of hand and fingers. The graft has definitely enlarged and is satisfactory to the boy in every way after 12 years of growth, following first recording.

graft has been satisfactory soon after the operation, it will probably persist as such. The unevenness and wrinkling can be minimized by careful dissection of the base and by using the full thickness rather than split grafts. However, chances of too much pigmentation persist without relief at the present time, and the patients may have to rely on the application of cosmetics (Figs. 1, 2, 3).

By studying these patients several years after operation, the fundamentals of treatment for early lesions have been made more clear and may be briefly outlined.

*Repairs of large surface defects if possible should be made early, before debilitation, scarring, and contracture have taken place. Most burns can be made clean enough to graft in three or four weeks, but, if good care is not given the*

areas, infection, pain, and debilitation develop, and late deaths may occur (Fig. 7).

*Homografts* may be used for temporary relief during waiting periods, but these grafts never persist in spite of attention to blood grouping



Fig. 5. One of the most difficult types with heavy distorting scar encasing entire arm and wrist. Required 5 split grafts but complete function of the skin grafts persists after a 5 year period of growth.

down into the "m" and "n" sub-groups. What does happen is usually a "take" of the grafts with a period of respite from the painful dressings for several days or weeks. With this, there is a general improvement, a clearing up of infection and, because of these things, a stimulation to spontaneous epithelization. Therefore, actual healing may occur even though the homografts are completely absorbed and this process may be so marked that some observers may think the homografts themselves have persisted (Fig. 6).

*Pinch grafts or small deep grafts* are used occasionally in areas that are covered by clothes and have the advantage of not requiring a major operation. However, they are unsightly in any area and may be replaced later with larger grafts if desirable.

When large areas are to be dealt with consistently, it is advisable to develop a *simple, direct method of cleaning wounds, obtaining large sheets of grafts of suitable thickness, and applying them accurately to insure growth.* The donor



Fig. 6. Very deep, widespread burn. Patient tided over critical period with large, split homografts from mother. Axilla then released in 2 split graft operations. Generalized skin shortening across abdomen and flank released 2 years later with split grafts. Normal function recorded a second time, 9 years after operation. Grafted area extends from iliac crest all the way up through axilla and down over arm.



Fig. 7a.

site of these grafts is most important and, when large areas are denuded, it is necessary to split through the skin to leave some deep gland elements to differentiate into squamous epithelium so that a new surface may form. With careful dressing of the donor site, surface healing will



Fig. 7. a, b, c, Complete circular loss repaired in 3 split graft operations. Shown after 2 years. d, same type of burn 8 years after 1 single operation.





Fig. 8. Complete function from 2 split graft operations. No foot drop even though nerve was exposed in dissection. Patient came in for amputation. Recorded a second time after 9 year growth period.

be satisfactory in twelve days. As many as four crops have been taken from the same area and one crop taken nineteen days after the previous one. If the reverse is true, that is, if the skin is cut through or the donor site becomes infected, healing will be delayed for weeks and no subsequent crops can be taken. This is somewhat comparable to the loss of epithelial healing that occurs under an infected tannic acid or silver nitrate crust (Fig. 8).

Any method that leaves behind enough skin for healing, splits through the skin, and for this reason the term "*thick split graft*" has been used. Many other names have been suggested but the term "*thick split*" seems most descriptive. The usual thickness is from one-half to three-fourths of the skin and the thickness can be graduated in cutting with some practice. The thickness of the graft varies in relation to the full thickness of the skin which, itself, varies greatly according to age, nutrition, race, and its position in the body. The actual measurement of the thickness of the graft has to be in relation to these variables. The main essentials are a long, sharp knife and some means of creating a diaphragm of the skin on which to cut.

*Saving a good donor site on badly burned patients* is important for obtaining smooth full thickness grafts when the final operations are to be done about the face and neck. Usually an entire thigh or the lower abdomen can be left for

this work, but it is frequently found that pinch grafts have been removed right out of the center of these areas.

With these criteria fulfilled, *huge areas may be grafted*. Up to 600 square inches have been done in one patient and 100 to 200 square inches at a time are possible. To do this, huge grafts are necessary and they have been taken as large as 36 inches by 4 inches. To try to repair large areas with small chips of grafts is uncertain and nerve-racking. Even at best, long operative times are necessary and the condition of the patient must be watched closely.



Fig. 9. Restoration in 1 split graft preceded by bone correction by Dr. Crego. Function satisfactory with graft on sole of foot after 9 years of growth. Free grafts can work on the foot only if sufficient deep pad has been left; otherwise, a thick pedicle-flap is used.

However, when large areas are grafted at one sitting, the *total* amount of work which must be carried out is greatly lessened (Figs. 7 and 8).

It seems definite that large surface repairs can be done successfully with free grafts without resorting to the cumbersome use of flaps in most

sufficient to restore a normal supply of oxygen to his tissues.

The first essential to beneficial oxygen therapy is the early recognition of oxygen want. Oxygen want is the descriptive phrase which has come to stand for both the technical terms hypoxia and hypoxemia. Hypoxia, or tissue oxygen want, refers to a deficiency of oxygen in the tissues, whereas hypoxemia is the name given to the condition arising from a low tension of oxygen in the blood. It cannot be emphasized too strongly that the early recognition of hypoxemia and the early institution of oxygen therapy are essential factors in the securing of good results from this mode of treatment. No longer should the administration of oxygen be delayed until cyanosis develops, nor should the oxygen tank be wheeled in only as a last resort to impress the relatives and scare the patient.

#### SIGNS OF OXYGEN WANT

The most reliable sign of early oxygen want is the pulse rate. As hypoxemia or hypoxia develops the pulse increases in rate and as the hypoxemia or hypoxia is relieved by excess oxygen the pulse returns to its original rate. If there is no change in the pulse rate with the administration of the proper concentration of oxygen, it can be assumed that the tachycardia is not due to oxygen want. The pulse rate can also be used as a guide to the proper time for the discontinuance of oxygen therapy. If the oxygen is discontinued and the pulse rate rises, the patient still requires excess oxygen. If the pulse remains the same the excess oxygen is no longer needed. The respirations may change but little until relatively acute oxygen want develops at which time the rate increases.

Central nervous system changes are manifested in early oxygen want. These are represented by sighing, yawning and restlessness progressing at times to acute delirium. This restlessness is a common manifestation of oxygen want, which is too often mistakenly treated with sedative drugs. The depressant action of these drugs serves only to increase the oxygen want and fails to control the restlessness until dangerous doses are employed. On the other hand the administration of oxygen would correct the true cause of the restlessness without the use of depressant drugs. Precordial pain may develop with early oxygen want and some individuals will have fibrillary muscle twitchings.

If the condition progresses into acute oxygen want, the pulse may become slow and bounding, the pupils fixed and dilated and the respirations, which may have been rapid and shallow, will become depressed and irregular. The cyanosis which



Fig. 10. Generalized skin shortening of 26 years' duration that prevented sitting down normally. Relieved with thick split skin grafts and shown after 15 years' duration of function.

instances. Growth (or stretching) of the grafts occurs so that, even after the patient has passed through long periods of growth, the restorations are found to be satisfactory.

400 Metropolitan Building.

#### THE PROPHYLACTIC AND THERAPEUTIC USE OF OXYGEN IN THE SURGICAL PATIENT\*†

STUART C. CULLEN, M.D., and  
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There has been an increase of 315 per cent in the use of oxygen for oxygen therapy in the State University of Iowa Hospitals in 1940 over 1939. This increase has come about because of the recognition of the benefits which can be obtained from adequate oxygen therapy; adequate oxygen therapy instituted early enough and continued long enough. Adequate oxygen therapy means the early administration, by whatever means necessary, of enough oxygen to produce physiologic results. Oxygen therapy is of no value to a patient in oxygen want unless the concentration of oxygen in the alveoli of that patient's lungs is suf-

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may have been only slight may become marked and convulsions may replace the muscle twitching. There has been no question about the need for oxygen in this situation. There should likewise be no question about the need for oxygen in the patient exhibiting the signs of early oxygen want.

#### TYPES OF OXYGEN WANT

Oxygen want has been classified into the following four types:

1. *Anoxic hypoxia* produced by any condition or conditions which serve to lower the saturation of the arterial blood, thereby decreasing the tension at which oxygen is delivered to the tissue cells of the body. This may be accomplished by:

a. A low tension of oxygen in the inspired air due to altitude or to the replacement of oxygen by an inert or anesthetic gas.

b. Abnormalities in the pulmonary mechanisms such as those produced by pneumonia, asthma, emphysema, collapse of the lung and obstruction of the air passages due to foreign bodies or bronchogenic tumors, or pressure from pathology in the esophagus or in the thyroid gland.

c. Direct communication between the right and left sides of the heart through which the venous blood is short-circuited or shunted as occurs in the congenital cardiac defects.

2. *Anemic hypoxia*, a condition arising from the diminution of the functioning hemoglobin in which case the oxygen consumption of the tissues removes a relatively large proportion of oxygen from the circulating blood and there is a resultant marked fall in oxygen tension in the tissues. This can result from hemorrhage producing a marked secondary anemia, from pernicious anemia or from poisoning by carbon monoxide, nitrites or chlorates, all of which produce a stable chemical compound with hemoglobin and prevent it from forming oxyhemoglobin.

3. *Stagnant hypoxia*, a condition in which in spite of a normal amount of oxygen in the arterial blood, the slowing of the circulation allows an excess of oxygen to be withdrawn from a given amount of blood in its passage from artery to vein with again a consequent fall in the oxygen tension in the tissues. It occurs in circulatory failure, obstruction to the venous return and shock.

4. *Histotoxic hypoxia* arising from the action of certain toxic substances in the tissue cells which prevents their adequate utilization of oxygen even though it is supplied at a normal tension. Examples of these agents are cyanide, alcohol and possibly certain narcotics.

#### METHODS OF ADMINISTRATION

Having recognized the need for oxygen therapy, a consideration of the methods of administration is in order. There are five fundamental and practical criteria by which the various modes can be evaluated. The criteria demand that the method be first, clinically or scientifically efficacious; second, readily available for large numbers; third, economical; fourth, a simple technic; and fifth, not interfere with nursing care.

There are four common methods of administering oxygen therapy: the tent, the mask, the box and the oropharyngeal catheter. For all of these the best supply of oxygen is the 220 cubic foot size cylinder of commercial oxygen. Medical oxygen is merely commercial oxygen dressed up in a fancy cylinder and is unnecessarily expensive. The commercial oxygen may be obtained in any welding or blacksmith shop or direct from the distributor and is consequently available in practically all communities. For all modes of administration, it is also necessary to have a reducing valve to reduce the high pressure of the large cylinder to a safe delivery pressure. This reducing valve may be of the type used by the welder or it may be adapted for use with oxygen therapy by having incorporated in it a regulator valve with a flow meter to show the flow of oxygen in liters per minute. In an emergency the welder's reducing valve is acceptable, the necessary rate of flow being estimated by the patient's response.

The principal advantages of the oxygen tent are the ability to obtain relatively high concentrations of oxygen efficiently, the cooling of the atmosphere and the lack of appliances on the patient's face. The disadvantages of the tent are its relatively high initial cost, making it not economically available in large numbers, its need for close and constant supervision in order to maintain proper concentration and its interference with complete nursing care. The element of claustrophobia has been largely eliminated by the use of transparent canopies.

The principal advantage of the mask for administration of oxygen therapy is the ease with which very high concentrations may be obtained. It is also useful in individuals who object to the oropharyngeal catheter or tent. Contrary to what might be expected the oropharyngeal catheter is better tolerated for long continued oxygen therapy than the mask. The disadvantages of the mask are the discomfort to the patient when worn over long periods and the interference with nursing care, particularly when the oronasal type mask is used. If the nasal mask alone is used, the patient must cooperate by keeping his mouth closed.

The oxygen box is a convenient, economical and simple method of supplying excess oxygen to the infant and small child. Relatively high concentrations can be obtained with reasonable flow rates. Nursing care is unhampered.

The oropharyngeal, or popularly but improperly termed nasal, catheter method is most readily available in all situations. Concentrations of 50 to 60 per cent of oxygen in the alveoli are obtained with moderate flow rates, making the method clinically and scientifically efficacious.<sup>1</sup> The low initial cost of equipment and minimal maintenance cost make it readily available for large numbers. It is a simple technic requiring minimal supervision. It is economical and there is no interference with nursing care.

There are a few fundamental requirements for the proper use of the oropharyngeal catheter method. Lack of adherence to these fundamental requirements results in inefficient therapy and accounts for many poor results obtained with this method. The first requirement is the proper humidification of the oxygen, since the dry oxygen from the cylinder causes irritation and is uncomfortable. A number of good humidifiers are available on the market. In an emergency a home-made humidifier can be made quickly and inexpensively out of two milk bottles or Mason jars, some glass and rubber tubing, corks and a rubber sponge for breaking up the oxygen into fine bubbles. The good humidifiers should possess a safety valve at the delivery outlet set at 40 millimeters of mercury pressure. In the presence of this valve no increased pressures can be built up and suddenly released in the patient's pharynx. The delivery tube can also be clamped off during swallowing to prevent the swallowing of large amounts of oxygen. The valve also provides a check on the patency and cleanliness of the catheter since a dirty and plugged catheter will build up back pressure.

The second requirement is the proper placement of the right type of catheter. The most acceptable catheter is made of Latex or gum rubber. It is size F 14, and should possess a large lumen. Several holes should be present along a distance of one and one-half inches from the tip of the catheter. An ordinary red rubber urethral catheter may be used but should have extra holes burned or punched in the area near the tip. The proper placement of the catheter in the oropharynx is a simple procedure. With the oxygen flowing, the catheter can be introduced along the floor of the nose into the oropharynx a distance equal to the distance from the nares to the tragus of the ear. Another method is to introduce the catheter until the patient begins to swallow. It can then

be retracted to a point just short of the swallowing reflex. It is unnecessary to visualize the tip of the catheter in the oropharynx. With the catheter in this position a flow of six to eight liters per minute will produce a concentration of fifty to sixty per cent in the alveoli. Any deviation from this position will markedly reduce the effective concentration.

The disadvantages of the catheter method are few, being chiefly the inability to obtain high concentrations when needed and an infrequent objection on the part of the patient to the presence of the catheter. Most objections by patients to the presence of the catheter can be traced to catheters which have become dirty, to improper humidification of the oxygen and to improper placement of the catheter.

The oropharyngeal catheter method provides an efficient means for the routine treatment of oxygen want. With the exception of the use of the oxygen tent for the severe thyrotoxic cases, the oropharyngeal catheter method is the one of choice in the surgical services.

#### USE OF OXYGEN ON SURGICAL SERVICES

The consumption of oxygen on the Surgical Services at the University Hospitals comprises approximately 50 per cent of the total amount used. The indication for oxygen therapy is the same as under any other circumstances, namely, the correction of oxygen want.

Specifically, the oxygen is a valuable adjunct in the treatment of shock whether it be traumatic shock as seen in an accident case or surgical shock developing either on the table or immediately post-operatively. Any patient in shock is suffering from stagnant hypoxia and is in oxygen want because of the failure of the sluggish circulation to supply enough oxygen to the tissues, hence, the rapid thready pulse, the shallow rapid respirations and the pale or subcyanotic appearance so often seen. It has been observed that if oxygen therapy is instituted along with other measures taken to combat shock in the surgical patient, such as fluids, blood, heat and shock position, recovery from the shock is facilitated.<sup>2</sup> In fact, certain cases have failed to respond as rapidly as they should to the supportive treatment until oxygen was added.

The toxic thyroid patient with his coincident increased metabolism requires excess oxygen and is a frequent user of oxygen therapy on the surgical service. The tent is of benefit to these individuals because of the cooling effect in addition to the oxygen.

The thoracoplasty patient needs oxygen not only to help overcome the shocking effects of the



actual surgical procedure, but also to maintain normal arterial oxygen saturation until he can compensate for the effects of the surgically induced pulmonary collapse. The same holds true for the patient who has had a lobectomy or pneumonectomy. The neurosurgical patient needs oxygen postoperatively to help combat both the surgical shock and the respiratory depression often connected with such procedures.

It is felt that the administration of high concentrations of oxygen in conjunction with the use of the Wangenstein suction or Miller-Abbott tube helps in reducing the severity of postoperative distention in the abdominal cases.<sup>4</sup> The mask is of particular benefit for this type of therapy.

Needless to say oxygen therapy should be instituted at once in cases of postoperative pulmonary complications such as atelectasis, bronchopneumonia, lobar pneumonia or pulmonary edema. Another type of case requiring oxygen is the patient suffering from a fulminating infection. The toxemia and hyperpyrexia attendant upon this condition produce a tissue hypoxia, the correction of which aids remarkably in the patient's recovery. It has been stated in recent literature that oxygen therapy also plays an important part in the proper healing of wounds.<sup>3</sup>

#### CONCLUSIONS

Oxygen therapy can be considered an important adjunct in the treatment of the surgical patient. It is a form of therapy possessing many benefits and no harm. Its benefits will be best demonstrated when instituted early and in adequate concentrations for a sufficient length of time.

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#### Discussion

**Dr. George H. Steele, Belmond:** I consider it a privilege to discuss this paper and want to compliment Drs. Cullen and Skewis on it, especially for their description of the symptoms of early oxygen want and the indications for its use.

We have had little experience with the nasal catheter method, having used the Boothby mask since its introduction almost entirely except for infants where we use the box. We have found the mask economical and efficient and few patients object to it. We have become enthusiastic over the use of oxygen, not only because of the benefits to the patient, but also because of the comfort we are able to give them. We feel that we have saved many patients grave risk

and discomfort and ourselves much worry and work by the early use of blood transfusion, oxygen and the Wangenstein suction tube. It is an axiom with us that any postoperative case which needs a transfusion automatically needs oxygen.

Oxygen is of definite value in postoperative distention. Any patient who is not relieved promptly by the ordinary measures is given oxygen with usually gratifying results. Oxygen is invaluable in the treatment of tetanus. We feel that one of our patients who had frequent and severe convulsions, would not have recovered if it had not been used. It not only greatly reduced the cyanosis during the seizures, but reduced the number of the seizures as was shown when the nurse had not observed that the tank was empty. A tent is used in these cases. It has been suggested that oxygen may be an aid because of its effect on the anaerobic tetanus bacillus. This may be far-fetched but it is conceivable that if the tissues are saturated with oxygen, it might have some effect in retarding its growth and producing toxins.

de Takats, in his experimental work on fatal pulmonary embolism, has found that oxygen is of distinct service in the treatment of animals. He states that, since only eight per cent of deaths in this tragic condition occur in the first ten minutes, an emergency oxygen equipment should be on each surgical floor.

The point that I feel is well worth reiterating is the comfort that many patients get from oxygen, as is shown by some who ask that it be started again after it has been discontinued. Since, as far as is known, it can do no harm and with large tanks, the nasal tube and Boothby mask, it is not expensive to use, it seems that more patients should have the benefit of this valuable agent.

#### INTRATRACHEAL ANESTHESIA IN HEAD OPERATIONS\*

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The chronologic development of endotracheal anesthesia has most thoroughly been given by Waters, Rovenstine and Guedel<sup>1</sup> who list incentives for its development: first, the treatment of respiratory obstruction and the resuscitation by artificial respiration; second, the protection of the tracheobronchial tree from contamination by debris in surgery of the mouth and nose; and third, the control of intrapulmonary pressure and intrapulmonary contamination in thoracic surgery.

The first mentioned laryngeal catheter devised by James Curry was known in 1791, and in 1800 Finé made a leather laryngeal cannula which he introduced through the nose. Cap of Lyons in 1828 described a laryngeal tube with pump attached for artificial respiration. Tracheal in-

\*Presented before the Ninetieth Annual Session, Iowa State Medical Society, Davenport, May 14, 15 and 16, 1941.

tubation was first described by Horace Green and D. M. Reese in 1854. They performed intubation of the bronchi for direct medication. In 1857, Bauchut reported a treatment of croup by laryngeal intubation with a tube introduced on a hollow sound and removed by an attached "silk-bridle". This was the forerunner of O'Dwyer tubes used in the treatment of laryngeal diphtheria prior to the advent of antitoxin.

Shaw<sup>2</sup> states that in 1871, F. Trendelenburg first devised an apparatus for the administration

humans and reported on more than one hundred cases when he demonstrated his apparatus in 1910.

Insufflation anesthesia was very popular until after World War I. However, it had definite hazards. The constant blowing of air, usually dry and cold, through the lungs depleted the tissue of moisture and heat and by excessive removal of carbon dioxide greatly disturbed the acid-base balance of the body. The ether vapor was delivered through a catheter under a pressure of 20 to 30 millimeters of mercury. In case the exit around this tube was blocked by a cord spasm or by debris there was present the danger of subcutaneous emphysema of the face and neck.

Plastic repair of war injuries about the face and neck lent an enormous impetus to endotracheal anesthesia. Working in a London hospital especially set aside for this work, Magill and Rowbottom evolved the technic of inhalation intratracheal anesthesia. Free from danger of emphysema and of depleting the lungs of heat and moisture, this to-and-fro breathing method immediately replaced insufflation anesthesia. Magill evolved the use of curved rubber catheters (Fig. II-1) of varying sizes and also the use of gauze packing in the pharynx (Fig. IV-1).

In 1924 Waters devised the carbon dioxide absorption technic, and in 1928 Guedel and Waters produced an inflatable cuff (Fig. II-2) for endotracheal catheters. They were not aware of the similar apparatus devised by Dorrance in 1910. This provided an air-tight, leak-proof system

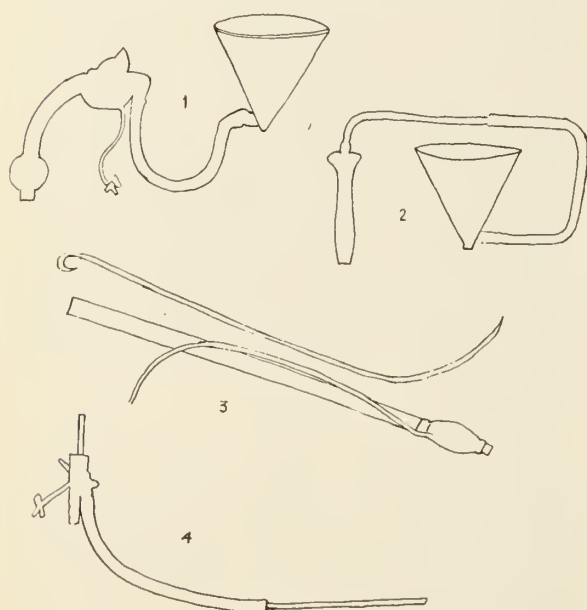


Fig. I—1. Tracheotomy cannula with inflated cuff devised by Trendelenburg in 1871. 2. Laryngeal cannula used by Hubbard prior to 1894 for excluding blood from the larynx, probably the first attempt to intubate the larynx for anesthesia. 3. Cuffed intratracheal tube reported by Dorrance in August, 1910, and employed by him for control of intrapulmonary pressure in thoracic surgery. 4. Tracheal catheter of Franz Kuhn, January, 1910, apparently the first endotracheal tube with a smaller catheter passed through it.

of endotracheal anesthesia. Fig. I-1). The apparatus was very workable, but was inserted through a tracheotomy opening. Prior to 1894, Hubbard illustrated an apparatus (Fig. I-2) for excluding blood from the larynx, apparently the first attempt to intubate the larynx for anesthesia. In 1910, Dorrance reported the use of an endotracheal tube having an inflatable cuff (Fig. I-3). Kuhn in 1910 was the first man to pass an aspirating catheter inside an endotracheal tube (Fig. I-4).

In 1909, Meltzer and Auer found that a dog whose respiratory muscles had been paralyzed by curare could be kept alive for many hours by blowing air into the lower end of his trachea with a catheter. If the air was passed over the surface of ether the animal could be kept anesthetized. Elsberg first applied this method to

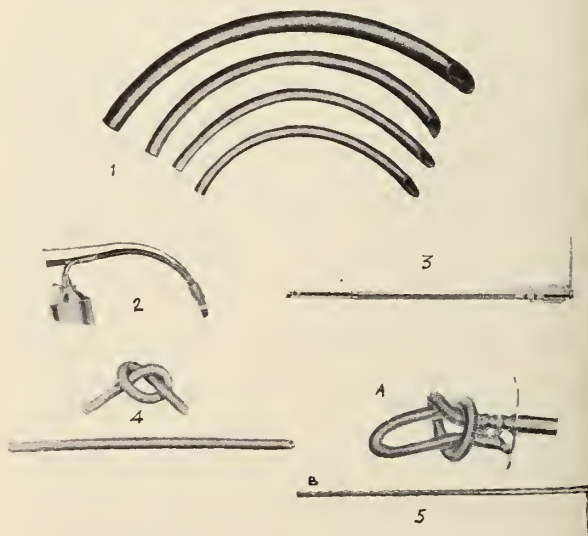


Fig. II—1. Magill's curved rubber intratracheal tubes. 2. Water's endotracheal catheter with inflatable cuff; carbon dioxide absorbing canister attached. 3. Flagg's intratracheal tube containing hollow metal sound on which it is inserted. 4. Hargrave's flexible intratracheal tube made of woven silver wire covered with gum elastic. 5-A. Woodbridge spring coil tube; 5-B. Hollow sound on which tube is inserted.



conserving greatly on anesthetic and insuring the patient completely against intrapulmonary contamination by blood and debris. The exhaled vapor passes through a canister of lime to remove the carbon dioxide and the re-breathed air is moisture-laden and warm. Oxygen is constantly added to the mixture as needed.

With the aid of Chevalier Jackson, Flagg in 1927, produced his spiral wire metal tip intratracheal tube (Fig. II-3), and a simple technic that delivers the anesthetic through a large rubber tube connecting the endotracheal catheter with the top of an ether can (Fig. IV-2). Hargrave soon followed with a woven silver wire, gum covered tube (Fig. II-4), and DeCaux produced a spiral wire tube with a rubber tip.

The spring coil of Flagg, DeCaux and Woodbridge tubes (Fig. II-5) is made the same as a common coil-spring used on screen doors and rendered air-tight by covering it with Penrose rubber tubing of proper size. The distal end of Flagg's tube resembles a bronchoscope and is too long to be expelled until the axis of the mouth is nearly in line with the axis of the larynx. The tube fits over a hollow metal sound on which it must be inserted in the same manner as a bronchoscope. This makes the method too technical to use for the ordinary run of anesthetics. The DeCaux, Hargrave and Woodbridge tubes are inserted in the same manner but due to the flexibility of their tips they can be withdrawn or expelled without extending the head.

The Magill tubes are made of rubber. In the process of fabrication they are molded to fit the natural curve of the arch from the mouth or nose to the trachea. The tracheal end is beveled to facilitate insertion. Many sizes with corresponding lengths and diameters are available. One English dealer makes twelve sizes ranging from an inside diameter of 3.5 to 9.5 millimeters. Most dealers list four sizes. For practical purposes three sizes have been found sufficient; an inside diameter of five millimeters for children up to five years of age; six millimeters from six to twelve years of age; and eight millimeters for patients over twelve years of age. These three tube sizes have been exclusively used in patients from seven months to seventy-five years of age in various operations including mastoidectomy, removal of eyeball, squint surgery, enucleation of branchial cyst and of submaxillary gland, external and intranasal sinus work and in tonsillectomy, for the past seven years. These catheters are sterilized for use in various ways. Magill recommends boiling for two minutes followed by immersion in 1:1000 biniodide of mercury solution until used. Another method is to immerse the

tubes in alcohol for at least thirty minutes before using. The cleansing of the inside of a tube immediately after use is most important. Stains can be readily removed from the outside of the cannula with ether. The tubes should be placed in a box of such shape as to cause them to rest in the position of their original curve, or they may be stored in individual plastic containers (Fig. III-1).

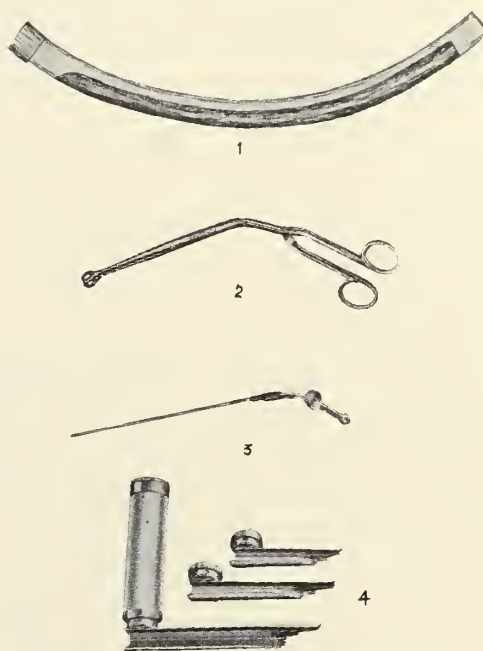


Fig. III—1. Plastic container for storing intratracheal tubes. 2. Magill forceps for threading the distal end of the endotracheal tube into the larynx or for retrieving the tube when it slips down out of reach. 3. No. 12 F suction catheter with finger stop used through tracheal tube for intratracheal aspiration. 4. Flagg's laryngoscope.

With few exceptions, intratracheal anesthesia is indicated in all operations of the head and neck where general anesthesia is preferred. For eye operations on children such as squint and enucleation, as well as for cleft palate work, there is no substitute for intratracheal anesthesia. In ocular surgery the ordinary mask directly interferes with the surgeon, cramping and contaminating his field. Intratracheal anesthesia eliminates this difficulty by removing the anesthetist from the field.

One of the most annoying obstacles in tonsillectomy on children is the repeated closing of the airway by an unskilled assistant who persists in pushing the tongue down and back. With an endotracheal tube in place the tongue cannot close the airway. A similar difficulty is avoided in mastoidectomy where marked turning of the head interferes with breathing and the operation must be temporarily discontinued to allow for adjustments. Intratracheal anesthesia is particularly

indicated in tonsillectomy on an obese patient with a short neck, small mouth, deep pharynx, a large tongue and an active gagging reflex. It is especially indicated when previous experience with a patient, or his history, suggests laryngospasm.

Active inflammatory disease or new growths in or adjacent to the larynx contraindicate tracheal intubation. The consensus of opinion is against endotracheal anesthesia in goiter work except where pressure on the trachea causes gross respiratory embarrassment. The presence of a tube in the trachea predisposes to postoperative tracheitis from irritation because of manipulation and manual pressure from without. Some claim that there is danger of spreading the infection in surgical mastoiditis; but the author has used it in twenty-seven cases in the past four years and has had no complications from intratracheal anesthesia.

Tracheal intubation assures patency of the airway so that constant adequate oxygenation minimizes rigidity. Endotracheal anesthesia likewise prevents spasm of the glottis which leads to anoxemia, respiratory exhaustion and shock. Magill<sup>3</sup> states it is probable that many of the surgical difficulties and postoperative complications and even fatalities attributed to anesthetic agents were primarily due to an imperfect airway. Safety against intrathoracic sequelae is assured by the existing intratracheal avenue for the removal of mucus and exudate. There is ever present a functioning equipment for artificial respiration and the set-up permits very rapid variations in the depth of anesthesia and the maintenance of extraordinary light levels without adverse reaction. Definitely less anesthetic is used. (Pahlas<sup>4</sup> of Dubuque submits for comparison the use of 45 cubic centimeters of vinethene and six ounces of ether in tonsillectomy and adenoidectomy on three consecutive cases, five, nine and fifteen years of age.) The patient's pupils are small yet he is relaxed; the breathing is quiet and effortless. The tranquility may be disturbing to the anesthetist at first, but as he becomes accustomed to the silence and ease, he gains added confidence in general anesthesia. A gauze packing in the pharynx has relieved his constant watch on bubbling blood, obstruction to airway and intrapulmonary contamination. The anesthetist is removed from the operative field and the anesthetic is likewise directed away from the surgeon. Thus the surgeon will not be exhaling the stale fumes of ether, so to speak, in his office for the remainder of the day.

Milne and Mackenzie<sup>5</sup> analyzed 1,253 cases of endotracheal anesthesia using Magill tubes performed over a period of eighteen months. In

this series there were 150 infants and children. They found that in all respects these compared very favorably with cases of other forms of anesthetic; there were no sequelae. Fennelly<sup>6</sup> claims that for ever increasing jaw fractures endotracheal anesthesia with avertin is far superior and is more commonly used than blocking of the branches of the fifth nerve. The injection combines the danger of spreading an infection with the great difficulty of trying to find the foramina when the usual landmarks are obliterated, and when displacement of the parts has radically altered the normal position of the bones. In the intubation technic, psychic shock incidental to reduction of fractures is entirely eliminated; insensibility to pain and the usual relaxation are assured. Even in cases where relaxation was not complete, amnesia was obtained and the patient had no recollection of pain or discomfort. It greatly aided the surgeon by permitting a quicker and better reduction.

As to disadvantages, Clement<sup>7</sup> states that the use of a laryngoscope (Fig. III-4) requires a deep plane of anesthesia to avoid injury to teeth and the soft structures of the mouth and throat. This depends in part on the skill of the surgeon, who, in this plan is the one who inserts the breathing tube. Once the tracheal tube is in place the administration of the anesthetic is the simplest, and as Chevalier Jackson states, the safest in the world. Clement also mentions the possibility of epistaxis from inserting a Magill tube through the nose, and damage to the throat or vocal cords if an oversized catheter is used or if undue roughness is exerted during the insertion. The care, skill and experience of the surgeon again play the important rôles.

The question of premedication must be settled by the individual operator. Thomas<sup>8</sup> states that whenever contraindications are absent, morphine with atropine or scopolamine should be given forty-five minutes prior to the operation. "Recently," he writes, "we have been using a basal dose of avertin rectally thirty minutes before operation in addition to the morphine and atropine." Some may criticize this procedure, saying that respiratory depression will ensue. "However," claims Thomas, "we have not had such experience with this preliminary technic." Hargrave<sup>9</sup> advocates the use of morphine 1/6 grain (1/8 grain for women) with 1/150 grain of atropine plus 1.5 grains of nembutal by mouth one-half hour prior to intubation. Flagg<sup>10</sup> writes that no morphine should be used because it depresses respiration, prolongs the stage of muscular rigidity and reduces the margin of safety between the stage of relaxation and the disappearance of respiration,



but that in intubation anesthesia, avertin is robbed of its greatest danger, respiratory obstruction.

Where the patient is very apprehensive or irritable and when parents request preliminary sedation a barbiturate may be given. Nembutal, grain  $3/4$  is given to children from five to ten years of age; one grain to those from ten to fifteen, and 1.5 grains to those over fifteen years of age.

Tuohy<sup>11</sup> advocates spraying the nose with a local anesthetic; he "allows the anesthetic agent to be inhaled to the region of the nasopharynx, oropharynx and larynx". Milne and Mackenzie<sup>5</sup> apply equal parts of 10 to 20 per cent cocaine and two per cent ephedrine to the nose and pharynx. Thomas<sup>8</sup> reports that he has not resorted to the usual preliminary cocainization because he has not found this procedure necessary. Rovenstine<sup>12</sup> states that the application of a local anesthetic drug to the upper air passages is not essential.

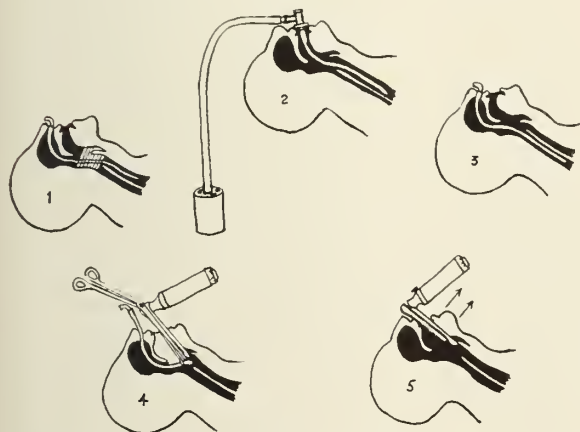


Fig. IV-1. Graphic illustration of gauze packing in the throat and proper alignment of chin at right angle with top of table. 2. Flagg technic with ether can; Adam's connector; metal sleeve in the proximal end of the tracheal tube prevents compression by patient's teeth; shoulder prevents tube from slipping down; screw cap at the top covers opening through which suction catheter may be passed down directly into the intratracheal tube. 3. Intratracheal tube in the esophagus. 4. Intratracheal tube threaded into larynx under direct vision with Magill forceps. 5. Laryngoscope blade lifted forward to expose larynx; no prying with upper teeth as fulcrum.

While the patient is being induced, the surgeon may scrub his hands and put on a pair of sterile rubber gloves which he carefully removes immediately after inserting the breathing tube. Then he runs his hands once more through alcohol and after donning a sterile gown is ready to operate. The patient is induced with vinethene; ether is gradually added until the eyeballs cease to roll and until the eyelid reflex is gone. A breathing bag may be used to utilize the advantage of accumulated carbon dioxide. The position of the head is adjusted so that it is in a straight line with the trunk and is extended until the line of the mandible (Fig. IV-1) makes a right angle with the table. The pharynx is thoroughly aspi-

rated either through the mouth or with a catheter through the nostril.

The previously chosen, well-anointed Magill catheter is inserted into the nostril and passed along the floor of the nose close to the septum. Since the distal end of the tube is beveled, the tip is more likely to be in line with the chink of the glottis if the tube is passed through the left nostril. As the catheter enters the pharynx a point is reached where the sound of respiration heard through the catheter is at maximal intensity. With the next inspiration the catheter should be advanced until it enters the trachea when a characteristic blowing sound can be heard. According to Tuohy<sup>11</sup> in about 65 per cent of the cases the catheter will successfully pass through the larynx, the natural curve of the tube facilitating this maneuver. If the first attempt fails, the catheter is partially withdrawn, the position of the head changed and the tube rotated to one side or the other before another attempt is made. If the second trial is unsuccessful the tube should be guided through the larynx under direct exposure with a laryngoscope and, if necessary, with the aid of a Magill forceps (Fig. IV-4). Magill<sup>3</sup> states that the nasal technic may be carried out under light anesthesia without muscular relaxation and that there is no risk of damage to the teeth or to growths which would be in danger from the laryngoscope, always required for the oral method. Tovell<sup>13</sup> reports that the nasal route is especially advantageous in ankylosed jaws and in an emergency to relieve cyanosis when it is difficult to insert an airway through the mouth.

In intubation through the mouth, the patient must be sufficiently relaxed so that the mouth may be opened. The scope is held with the left hand; the upper lip is retracted from the teeth and the first two fingers of the right hand placed on gauze over the upper teeth, while the handle of the scope is advanced with the right thumb. It may be found that a large tongue will roll into the slot of the scope and obscure the view. This can be prevented by keeping the laryngoscope blade to the right side of the mouth. When introduced a sufficient distance the blade is lifted without a prying motion. (Fig. IV-5) so that it picks up the epiglottis and exposes the glottis. The tube which has been well lubricated may be quickly and readily slipped down inside the blade of the scope and at the beginning of inspiration, while the scope is given an extra lift forward, the tube glides through the larynx. The tube may be passed down the right side of the mouth outside of the laryngoscope. Hargrave turns the patient's head to the left as far as possible and introduces the scope from the

right side of the mouth along the dorsum of the tongue over the epiglottis exposing the larynx.

At this time or prior to introducing the laryngoscope a mouth gag may be anchored on the left molars to avoid compression of the intratracheal tube by the patient's teeth. This gag may be discarded when an Adam's connector (Fig. IV-2) is used because the metal sleeve extending into the intratracheal tube about an inch prevents its compression. The sleeve is fitted before the tube is sterilized. An angulated connection slips into this metal sleeve making an airtight slip joint. The angulated connector may be joined to the Y tube of a gas machine by a second tapered slip joint or it may be joined to a single large rubber tube, eighteen inches long and three-fourths of an inch in diameter, the other end of which fits over the neck of a fully opened ether can. Four holes about three-eighths of an inch in diameter are punched in the top of the can. Flagg<sup>14</sup> originally described this very simple method (Fig. IV-2) which depends upon the passing of inhaled air through the holes over the surface of the ether. The can may be quickly disconnected if the anesthesia becomes too deep; to hasten the depth of narcosis the ether is agitated by shaking the can.

After the intratracheal catheter has been inserted the anesthetist may detect at any time the collection of mucus in the intratracheal tube and may decide to aspirate it. The Adam's connector is fitted with a screw cap which covers an opening looking directly down into the intratracheal tube. By removing this, a lubricated 12 F rubber catheter (Fig. III-3) may be easily passed into the tracheal tube and suction applied, without interruption of anesthesia or operation.

When gas is to be used or when intranasal or intra-oral bleeding might be troublesome the laryngopharynx is packed with gauze—five to six feet of sterile two-inch bandage is commendable (Fig. IV-1). The gauze is lightly moistened with liquid albolene; a dry packing engenders postoperative soreness. The gauze fulfills three functions with certainty; it keeps the tube in position; it prevents air leaks so that the closed method, necessary for administration of gas anesthesia, is assured; it is a complete bar to the inhalation of blood or foreign bodies. At the termination of the operation the mouth and pharynx are thoroughly aspirated because the larynx remains patent for a time after extubation. If gauze packing has been used aspiration is instituted before and after its removal. Then the trachea is aspirated with the catheter through the tracheal tube until the airway is clear. Direct

suction may be applied to the free end of the intratracheal tube as it is withdrawn. If feasible the tube may be left in the trachea until the patient has nearly recovered from the anesthesia and begins to gag or attempts to cough.

All of the complications following intratracheal anesthesia may be linked to faulty or careless technique. If the tube is pulled up and down through the nose in an attempt to force a reluctant tube to enter the larynx when the head is in the wrong position, trauma may be inflicted to the mucous membrane of the nose and pharynx. Misplacement of the tube into the esophagus (Fig. IV-3) may cause inflation of the stomach and intestines if an anesthetic machine is used. With the low pressure machines now in common use it is unlikely that any serious damage will follow. This can be prevented by intubation under direct vision and by hearing or feeling the blowing of air from the trachea through the tube. The most common sequelae of mild hoarseness and sore throat are consistently encountered, persist for only one to three days and are inconsequential. Aggravation of postoperative hoarseness to a dangerous degree follows pushing of the tube against the glottis or the epiglottis when the position of the head is wrong, or when the glottis is closed in spasm. The author is convinced with Milne and Mackenzie<sup>5</sup> that blind intubation should be done only in the rare cases where direct vision cannot be employed because of deformities of the neck, lips, tongue, teeth or pharynx. Blind intubation was used in the majority of reported cases of trauma to the nose and of laryngitis, and of granulomata of the cords. They consider that blind intubation should not even be attempted if direct vision can be employed, because it is a haphazard method of performing an operation which can be done with precision. They are convinced that oral intubation is the route of choice even in cases of oral surgery, provided the tracheal tube does not seriously hamper the work of the surgeon, and that in nasal intubation the catheter should be directed through the glottis under direct vision. Aside from a case of hoarseness which persisted for two weeks during which time the vocal cords were red and swollen, the author has had no complications in 178 cases. The patient was a girl, fifteen years of age, who had been sent to the hospital for a tonsillectomy by the family physician. After she was anesthetized to the stage of relaxation her glottis was readily exposed with the laryngoscope. Three or four attempts were made to pass the intratracheal tube before success was attained, although her larynx was relaxed, normal in appearance and of average size to accommodate



a definitely larger tube than was used. The writer offers the explanation that perhaps for some anatomic peculiarity the tip of the tube each time lodged in the right ventricle. Recently, six months after operation, her larynx appeared normal.

Cohen<sup>15</sup> reported the case of a woman, forty-nine years of age, who was anesthetized for fifty-five minutes under nitrous oxide-oxygen-ether. A "medium-sized" Magill tube was inserted by the "blind" nasal route after repeated attempts. Forty days later she came to the out-patient department complaining that she felt something moving up and down in her throat, and that at times she was unable to talk. A small tumor, reported as "polypous granuloma of unspecific nature", was removed from the base of the right vocal cord.

Gould<sup>16</sup> reported a woman, forty-nine years of age, who had been anesthetized three hours and ten minutes using nitrous oxide-oxygen-ether through a Magill tube passed through the nose. The tube was readily inserted. During her stay in the hospital she had short attacks of loss of voice. Three months after operation the patient had an attack of choking and became blue in the face. Under direct laryngoscopy a growth was removed from the hypolarynx but recurred in two months and had to be curretted. Histologic examination confirmed the diagnosis of granuloma. It seems possible that the distal-pointed extremity, if it should rest against any part of the laryngeal mucosa, would cause abrasion by the continuous up and down movements of the glottis against it during respiration.

When too long an intratracheal tube has been used it may enter the right bronchus. It happens more often during oral intubation because the distance between the external orifice and the bronchus is shorter than by the nasal route. It is quite simple to fit the patient roughly with a tube by external comparison with the neck. If care is taken to insert the point of the tube one and one-half to two inches beyond the vocal cords, ulceration of the glottis will be avoided and the bronchus need never be entered.

Another possible complication is the inhalation of the tube. The tube slips off a loosely fitting angle-piece and is inhaled out of reach and may enter a main bronchus. If the anesthetist is not immediately aware of this the patient may become light enough to clench his teeth. When using an oral tube, sudden and serious obstruction to respiration at both ends of the tube may then follow. The laryngoscope is quickly inserted and the tube recovered with a Magill forceps (Fig. III-2). In the case of a nasal tube there is less prospect of the tube slipping or of respiratory obstruction.

It is usually impossible to retrieve the tube through the nose; it is recovered through the mouth with the aid of the laryngoscope and forceps.

#### SUMMARY

The development of intratracheal anesthesia first passed through the stages of laryngeal intubation for respiratory obstruction and for resuscitation; then tracheal intubation for intrapulmonary medication and for endotracheal anesthesia. Intratracheal insufflation preceded intratracheal to-and-fro inhalation anesthesia. When Magill demonstrated the ease of administration, the safety and the many advantages of intratracheal inhalation anesthesia, especially in operations of the head and neck, it immediately supplanted insufflation.

Several intratracheal tubes followed Magill's discovery but none is as simple, as practical and as easy to insert as his curved rubber catheter.

The advantages of endotracheal anesthesia are many to the patient as well as to the surgeon and the anesthetist. There are many indications but scarcely a single contraindication to its employment in head and neck surgery.

The technic of inserting an intratracheal tube is simple and quickly mastered and pays enormous dividends in ease, comfort and safety to the surgeon who employs it. Having acquired the technic, the user is at once rewarded by the absence of the complications encountered in general anesthesia for surgery of the head and neck, including eye, ear, nose, mouth and throat operations.

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### Discussion

Dr. Ralph C. Carpenter, Marshalltown: Among the many advantages offered by endotracheal anesthesia are; first, the anesthetist and equipment are removed from the operative field; second, a patent airway is maintained at all times and is kept clean; third, there is less of the anesthetic agent employed, which means a distinct lessening of any toxic effects of the anesthetic; and fourth, it affords a method of maintaining positive intrabronchial pressure in thoracic surgery.

Dr. Thorson has pointed out that endotracheal anesthesia may be used in all operations of the head and neck. I have had no experience with it in cleft palate surgery, and have preferred the nasal catheter method. I would like to ask Dr. Thorson if he has had any trouble with postoperative laryngeal edema in young children. As we all know, the laryngeal tissues in a child are easily traumatized and react very strongly to such trauma. I would imagine that there would be very little difference in the amount of trauma produced by the passage of an endotracheal tube and that produced by a bronchoscope; yet, we well know that even in the hands of an expert, the incidence of postbronchoscopic laryngeal edema is high. I have heretofore believed that intubation was not without danger, in children under six or seven years of age. Because of the possibility of laryngeal edema, I have not felt justified in using endotracheal anesthesia in adenotonsillectomies, which can usually be performed with few difficulties by the ordinary methods of anesthesia.

The endotracheal tube also has a very definite place in intravenous anesthesia. Laryngeal spasm occurs infrequently, when this type of anesthesia is employed, but the surgeon must be prepared to rectify this complication if it should suddenly develop. One may forestall the spasm by inserting an endotracheal tube as soon as the patient is relaxed. One may also administer oxygen with ease, if such a procedure becomes necessary.

It has been a privilege to hear Dr. Thorson's interesting and very instructive paper. There can be no doubt that considerable enthusiasm will be generated among the members of the Section for endotracheal anesthesia and a sincere desire to employ this valuable aid in surgery of the head and neck.

### SEVERE GASTRO-INTESTINAL COMPLICATION FOLLOWING THE USE OF SULFAPYRIDINE\*

SYDNER D. MAIDEN, M.D., Council Bluffs

The toxic symptoms and complications which may accompany the use of sulfapyridine are familiar to all of us. Fortunately they are few and most of them can be controlled or prevented if we are alert and recognize their clinical manifestations. Occasionally one of the frequent minor symptoms becomes one of serious import, completely dominating the clinical and therapeutic picture.

The gastro-intestinal tract frequently presents toxic symptoms. Such symptoms may vary from slight gastric distress and heart burn to nausea, vomiting, colicky pains, diarrhea, etc. Discontinuance of the drug usually results in the prompt disappearance of these symptoms. The literature does not mention any instances in which the gastro-intestinal irritation progressed to the point of actual tissue destruction. Whether or not this is possible as the result of sulfapyridine therapy has not been revealed, to my knowledge. Inasmuch as we were confronted with such a complication the case is herewith reported.

#### CASE REPORT

The patient, a boy, four years of age, developed the "grippe or flu". This was accompanied with a headache and sore throat. Two weeks later he suddenly had a severe pain in his right ear which was not relieved by the ordinary methods. The drum was incised two hours after the onset of the pain. This was followed by a profuse bloody discharge and relief from the pain. The pediatrician, under whose care he had been, had prescribed neoprontosil, five grains every four hours at the beginning of the illness. This medication was discontinued and sulfanilamide, five grains every four hours, night and day, was prescribed with the hope of obtaining better results.

The clinical course was typical of a rapidly progressive mastoiditis. After the first few days the discharge from the ear became purulent and profuse. The boy complained at times of pain in the back of his head and in the right temple. There was moderate tenderness over the mastoid. Sepsis increased rapidly and the temperature ran a moderately spiked course. These symptoms increased gradually for twelve days and then became much more marked. The boy looked sick and the temperature had reached 104.5 degrees on the afternoon he entered the hospital.

The patient entered the hospital on March 1,

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1940, two weeks after the ear complications developed, and one month after he became ill. The examination showed a sick child with a septic appearance, especially his color. The pulse was 140, the temperature 101.5 degrees. There was a profuse purulent discharge from the right canal, moderate tenderness over the right mastoid with slight thickening of the periosteum. There was some pain in the back of the head and over the right eye, but no spasticity in the neck. The remainder of his physical examination was irrelevant.

The laboratory findings were as follows: red blood cells, 4.4; white blood cells, 23.1 with a differential count of 72 segmented cells and four stabs; hemoglobin, 75 per cent. The urine had a specific gravity of 1.023, with a trace of albumin, an occasional red blood cell, pus cells and a few fine granular casts. The report on the x-ray was "Cell structure fairly well developed but more hazy and less pneumatic than on the left side, probably thickened membrane on the right side".

In the operating room the next morning an extensive cellular development in the mastoid was found for a child of four years. Bone necrosis was extensive with complete coalescence, except in the postsuperior angle, completely belying the x-ray evidence. The inner plate of the mid-fossa was necrotic and partially destroyed by necrosis. It was removed completely. The bony plate of the lateral sinus was solid and white throughout, although it was thin. It was not disturbed. Pus from the mastoid showed cultures of streptococci.

The clinical postoperative course was typical of a septic case. That afternoon the temperature reached 104.5 degrees, which receded daily by lysis, spiking slightly each afternoon and not reaching normal until the evening of the fourth day. Nausea was pronounced and was relieved by intravenous glucose. Inasmuch as chemotherapy had been administered for four weeks these drugs were discontinued. On March 4, two days after the operation, the white blood count was 16.0. The differential count showed 56 segmented cells and 32 stabs. The next day the red blood count was 3.9; the white blood count was 15.7, with a differential count of 29 segmented cells and 44 stabs; the hemoglobin was 75 per cent. He received 250 cubic centimeters of citrated blood in the vein. Two days later, on March 7, the blood picture was about the same and another transfusion of 250 cubic centimeters of citrated blood was given and repeated on March 8.

The temperature began to spike again on March 7 and the child complained of pain in the back of the head and in the right temple. He appeared

more ill. There was some tenderness over the right internal jugular vein. On March 9 the red blood count was 5,999; the white blood count was 17.9, with 31 segmented cells and 22 stabs; the hemoglobin remained at 75 per cent. Neoprontosil was again ordered, five grains every four hours, night and day. That day the boy's temperature went to 105 degrees, and remained at that level during the night. He appeared seriously ill but except for pain at intervals in the occiput and over the right eye there were no findings to suggest intracranial pathology. The more probable diagnosis seemed to be a lateral sinus involvement. There was considerable tenderness over the right jugular vein. Blood cultures had been negative but this fact lost part of its significance, in our judgment, because of the previous chemotherapy.

The next morning, on March 10, the white blood count was 28.2, with 58 segmented cells and 30 stabs. The temperature was still 105 degrees. The patient was taken to the operating room, and the wound was explored. The exposed dura of the mid-fossa was covered with thick, solid, apparently healthy granulations. Lifting of the dura from the margin of the surrounding bone failed to disclose any localized collection of pus, although the dura was intensely injected as far as visible. The bony plate of the lateral sinus was removed throughout, disclosing the membranous wall to be moderately thickened, injected with free bleeding from small granulations and vessels on the surface of the vein. The lumen of the vein appeared to be patent. Confronted with the urgency of the case it was decided it was imperative to rule out a possible mural thrombus. The sinus wall was opened in its full length. There was no evidence of a clot. A culture was taken of the blood and 250 cubic centimeters of citrated blood were given. After seventy-two hours this blood culture showed streptococci.

Following surgery the child's temperature dropped abruptly to normal but immediately began a continuous climb until it again reached 105 degrees at the end of thirty-six hours. It remained at this level through the night, and rose to 106 degrees on the next morning. In the meantime the white blood count had increased from 28.12 with 30 stabs to 51.9 and 35 stabs. The child was desperately ill, irrational and semicomatose. There was no spasticity of the neck and his reflexes were uniformly moderately exaggerated. Spinal puncture, however, showed the fluid to be under marked pressure, very cloudy with 14,000 cells (that evening the cell count reached 51,900). There were many short-chained streptococci and diplococci (pneumo) organisms found on a direct smear.

The following day cultures of this fluid showed a predominance of long-chained streptococci.

Sulfapyridine, in seven and one-half grain doses every four hours, was given by mouth, and spinal drainage every six hours was ordered. The child showed improvement promptly and his symptoms gradually abated. After seven days of this therapy, on March 19, the temperature had been practically normal for forty-eight hours. The child was conscious and bright. The spinal fluid had been clear for several days, under normal pressure, sterile and the cell count was 90. The red blood count was 4.3 (seven transfusions having been given since the mastoidectomy), the white blood count was 10.2 with 12 stabs, and the hemoglobin was 80 per cent. The blood concentration had been maintained as nearly as possible at ten milligrams per cent. On March 15, the third day after the use of the drug it reached eighteen milligrams per cent, when the dosage was reduced allowing the concentration to recede to ten milligrams per cent. On March 19 the concentration was 9.2 milligrams per cent. On March 20 no computation was made. On March 21 the concentration had dropped to 2.66 milligrams per cent, although the oral dosage had been maintained. At this time the child began to be more restless and appeared more ill. The temperature showed some elevation and the spinal fluid was again cloudy, having a cell count of 1,750. The white blood count was 19.4 with 6 stabs. The dose of the sulfapyridine was increased to seven and one-half grains every three hours.

That evening there was a small amount of bloody fibrinated material in the child's mouth. He kept constantly chewing and we presumed that he was chewing his lips and cheeks. Examination of the tissues in the mouth failed to show any raw or bleeding areas. During that night the temperature rose to 104 degrees and the next morning the child was again unconscious and raving. The spinal fluid showed a cell count of 3,550 and the white blood count was 29.4 with 28 stabs. The sulfapyridine blood concentration was 6.4 milligrams per cent. There was present more of the bloody material in the mouth which the patient kept chewing and pushing from the mouth with his tongue.

Sulfapyridine was discontinued by mouth; 250 cubic centimeters of citrated blood were given in the vein and followed with one gram of sulfapyridine in 50 cubic centimeters of sodium chloride. This intravenous dose of the drug was repeated three times during the next twenty-four hours. The blood concentration was brought up to 11.7 milligrams per cent. There was an immediate improvement in all of the symptoms and the

child become more conscious. At this time it became impossible to find veins in which to give the drug. As a result of the ten transfusions which had been given and the fact that wherever the drug had been introduced into a vein, that vein was destroyed for further use, we ran short of veins that would permit of entry. We were able to administer one or two more doses at irregular intervals but we lost control of the blood concentration completely. The boy died March 27, fifteen days after sulfapyridine therapy was instituted. The diagnosis was fulminating meningitis.

During the last four days of the boy's illness he regurgitated more and more of bloody fibrinated material and flat tissue-like masses. Some of these masses were two to three inches in length and one or two inches in width, resembling mucous membrane. Specimens of this tissue were examined in the laboratory and reported as "degenerated connective tissue containing some blood vessels and invaded by leukocytes." An autopsy was not obtained.

#### COMMENT

The case was one in which the infective organism, from the beginning and extending through the course of the mastoiditis, was a streptococcus which responded neither to sulfanilamide nor neoprontosil therapy. The presence of the diplococci, resembling pneumococci, on the direct smear of the fluid obtained at the first spinal drainage was a co-infection which appeared after the mastoidectomy. This organism disappeared from the spinal fluid within forty-eight hours after sulfapyridine was started. The only differentiation we had of the streptococci was that it was not hemolytic. Both the streptococci and the diplococci were affected promptly by sulfapyridine.

When the sulfapyridine therapy was instituted in this case, the child was so desperately ill that it was impossible to detect many of the usual toxic symptoms to be observed. Cyanosis was present but no more than could be attributed to the meningitis. Since the patient was unconscious we relied upon the blood count and blood concentration of the drug in determining the dosage. Not until we observed the bloody material in the mouth, accompanied by the rapid fall in the blood concentration of the drug did we begin to contemplate what probably confronted us. Even then we were baffled as to its nature until we received the laboratory report on the regurgitated tissue.

That this tissue could not have been from the mouth or throat was evident because no raw surfaces were seen upon examination and there was too much of it. That it could not have been from the esophagus was deductible by the thickness of



the masses regurgitated and again from the amount of it. Furthermore, there was no logical reason why the esophagus should have been so affected by the drug and the mouth and throat escape. That it was from the stomach was surmised, justifiably we thought, because one surface of these masses had the appearance of mucous membrane; that only from a large mucous membrane surface as is found in the stomach could have come such a large amount of the material; and also that with the appearance of this complication the blood concentration of the drug dropped rapidly showing that the absorptive property of the mucous membrane of the stomach had been affected.

It was indeed unfortunate that an autopsy was not obtained since it would have revealed the information needed to say definitely what pathologic changes took place and where.

One is not justified in concluding that the tissue destruction to the extent of sloughing was the direct result of the use of sulfapyridine alone. It must be borne in mind that extreme sepsis was present from a virulent organism circulating in the blood stream. However, I have never observed this complication as the result of sepsis alone. Another factor which must be considered is that in this case nothing was taken into the stomach for several days except the drug and a small amount of fluids. Thus the gastric mucosa was exposed to the direct action of the drug. Sodium bicarbonate was not used until after the appearance of the blood in the mouth. Obviously it is impossible to reach a positive conclusion with the information available in this case, but it is my opinion that the sulfapyridine was the dominant factor in causing the tissue destruction.

If the boy's blood vessels had not been unusually small, making it necessary to cut down on them for most of the blood transfusions, we might have been more successful with the intravenous therapy. The dilutions of the drug used always obliterated the lumen of the vessel, at the site of injection, and we ran out of vessels.

#### CONCLUSIONS

1. Sulfapyridine should be tried in all streptococci infections which do not promptly respond to sulfanilamide, neoprontosil or sulfathiazole therapy.

2. The gastric mucous membrane should be protected when sulfapyridine is used whenever possible by solid foods and ample fluids. Where such protection cannot be given, intravenous therapy should be resorted to, using sufficient dilation and administering such dilutions slowly so as not to obliterate the lumen of the vein.

#### HYPERTENSION: MODERN CONCEPTS IN DIAGNOSIS AND MANAGEMENT\*

EDWARD W. ANDERSON, M.D., Des Moines

It is stated that hypertension is present in 15 per cent of all adults and that 23 per cent of patients who are over fifty-three years of age die of hypertension every year. Hypertension being, therefore, one of the most common and serious conditions or diseases of middle age, the attention of the medical profession has been focused on trying to determine the basic cause or causes. Of course, I am referring to the hypertension not associated with known causes, the so-called essential hypertension. Etiologically, it is probably due to a fault in the neurogenic, endocrine and vascular mechanisms, which is only a way of saying that the cause is really unknown. About 100 years ago it was thought that hypertension was always an indication of renal disease. When hypertension was then found in cases where there was no demonstrable evidence of renal disease or diminished renal function, arteriosclerosis was thought to be the etiologic factor and those cases showing only an increased blood pressure were called essential hypertension. Since the peripheral resistance offered by the smaller arteries and arterioles to the blood flow is an important factor in determining the blood pressure, vascular tonus became important. The sympathetic nervous system which controls the vasoconstrictor fibers of these smaller arteries and arterioles became the center of attention for the neurogenic theory of hypertension. There was no evidence that these vasoconstrictor nerves were hyperactive in essential hypertension, but such a premise was assumed and treatment was devised to relieve this effect.

With the work of Goldblatt and his associates during the past ten years, a gradual shift from the neurogenic theory is taking place. He showed that a hypertension similar to the benign type found in man could be produced in dogs by a clamp placed on one renal artery, causing a renal ischemia. By placing clamps on both arteries, a more severe hypertension resulted, comparable to the malignant type found in man. This so-called "Goldblatt hypertension" is shown to be independent of the nervous system and persists after the removal of the entire sympathetic nervous system. Saline extracts of the kidneys from hypertensive animals and men with essential hypertension have been found to have a greater vasopressor action than a similar extract of the kidneys of normal men or dogs.

The vasopressor substance circulating in the blood is thought to be a result of the renal

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ischemia, a substance elaborated by the damaged kidney. This renin, or so-called renal pressor substance, has been shown by Corcoran and Page to have no vasoconstrictor effect in its purified state. The addition of "renin-activator," a substance obtained from the blood plasma, to solutions of renin, permits a full vasoconstrictor effect. A crystalline pressor substance is obtained by the interaction of the renin and the renin-activator, called angiotonin, and is probably the effector substance of the action of renin. Muñoz, an investigator from Buenos Aires, has postulated the same theory, stating that renal ischemia determines the secretion of renin, which is an enzyme and acts upon a blood globulin (hypertensin precursor), and give rise to a substance (hypertensin) which produces vasoconstriction.

Infusion of this angiotonin or hypertensin into conscious, trained dogs with explanted kidneys results in an increased arterial blood pressure, decreased renal blood flow and an increased extraction of inulin from the blood by the kidney. These latter two are in great part the result of efferent glomerular vasoconstriction.

More recently, Page has extracted a substance from the normal kidney that reduces the blood pressure, the effect occurring after a few days; the blood pressure was found to rise after discontinuance of this extract. Muñoz discovered another enzyme, called hypertensinase, which he found present in the blood and body tissues, which destroyed hypertensin. These experiments have been repeated and reported widely. A renewed interest has been awakened as to the humoral theory of hypertension and there is a tendency to assign a renal lesion to every case of hypertension.

This theory received much experimental and practical importance when it was found that the hypertension which was present in some cases of kidney diseases, especially unilateral chronic atrophic pyelonephritis, was relieved sometimes upon the removal of the diseased kidney. Great enthusiasm resulted, but not all cases of pyelonephritis have hypertension. Braasch found hypertension in only 26.1 per cent of 180 patients with chronic bilateral pyelonephritis. It is advised that a careful renal study be made of all cases of essential hypertension and in only those found to have renal disease, a careful evaluation of the hypertension be made to determine if it followed the renal disease.

As previously mentioned, "renal hypertension" is now in vogue and the humoral theory is back. However, not all cases of hypertension can be explained by this theory, so the neurogenic theory cannot be discarded completely. If it were, one

of the most prolific of the reasons for the experimental works on the management of hypertension would be lost. I speak of the support the surgeons have so generously given to the internists in the care of this condition. Medical treatment has always been and still is palliative, producing 80 per cent subjective improvement with its methods of rest, psychotherapy and sedation. Surgical treatment has produced 80 per cent subjective improvement with not any more than 50 per cent of lowering of blood pressures.

The surgical approaches can be considered the only modern concept in management. They have followed two leads: first, to alter and decrease the function of the suprarenal glands; and second, to interrupt the nerve impulses carrying vasoconstrictor stimuli to the arteries and arterioles. The first lead postulated the theory that adrenalin was in excess in the blood stream and by denervation of the adrenal glands or a suprarenalectomy, this would be corrected. Both operations were proved ineffectual. Following the second lead, early, a bilateral lumbar sympathetic ganglionectomy and trunk resection were done. The most radical operation was the ventral rhizotomy, including the section of the ventral roots of the spinal nerves from the sixth thoracic to the second lumbar inclusive. This was more effective but too risky and disabling.

Adson now resects all three splanchnic nerves with portions of the celiac ganglion and removes completely the first and second lumbar ganglia on each side through a subdiaphragmatic approach. A two-stage operation is done with an interval of ten days between the two stages. He reports, of 156 picked cases, that 80 per cent were benefited clinically and the blood pressure was reduced in 55 per cent of the cases. Max Peet performs a bilateral supradiaphragmatic resection of the splanchnic nerves and sympathetic trunk from the tenth to twelfth thoracic levels. Smithwick does the same operation and both report favorable results.

Goldblatt stated that various authors tended to be enthusiastic about operations of their own invention and concluded that the virtue any operation for hypertension may have would be due to an increased blood flow through the kidney by trying to increase the collateral circulation of the kidney in patients with renal ischemia. Operations of decapsulation of the kidneys, omental transplants, nephro-omentopexy and nephromyopexy have not given any favorable results.

Aymen reported that anything given to a hypertensive individual with great enthusiasm on the part of the physician would yield 82 per cent subjective improvement. Volini and Flaxman studied



the effects of nonspecific operations on the hypertension and found the same general results.

#### CONCLUSIONS

1. Hypertension is a widespread disorder.
2. Renal ischemia has become the fashion as the etiologic factor for hypertension.
3. Surgical management has not proved entirely successful in curing hypertension.

#### Discussion

**Dr. Herbert W. Rathe, Waverly:** Dr. Anderson has given us an excellent review of the recent investigative work on the etiology and treatment of hypertension. There have also been some significant studies in the diagnostic field which I should like to bring to your attention. These studies concern the possibility of an individual becoming hypertensive. The cold pressor test devised by Brown and Hines consists of measuring the response of the blood pressure after the immersion of a hand in ice water under specified conditions. If the systolic elevation is over 20 millimeters of mercury and the diastolic elevation is over 15 millimeters of mercury above the basal level previously determined, that individual is considered to be potentially hypertensive. When the systolic pressure is 140 millimeters of mercury or over and the diastolic pressure is 85 millimeters of mercury or over, the chances are even greater that he will develop a permanent hypertension in the future. Hines has also found that if the initial blood pressure reading is above 140 millimeters of mercury systolic and 85 millimeters of mercury diastolic which is thought to be a response due to nervous influence, that patient in a majority of instances will develop hypertension. Another test which has been used for the same purpose is the two-step test as modified by Masters, and this has brought out equally significant results.

The status of the treatment of hypertension is at present uncertain. Certainly we see many patients who have elevated blood pressure and in whom therapy is not indicated. One cannot be entirely convinced as yet that reducing the blood pressure gives more than symptomatic relief. Since surgical and medical measures are about equally effective, we should endeavor to use all of the medical measures available before submitting our patients to surgery except as an experimental procedure. A form of medical therapy which has been mentioned and which is available to all of us who are willing to give a little time to the proper control of it, is the use of potassium thiocyanate. Davis and Barker have recently published experimental evidence showing that the depressor effect of the thiocyanate therapy is the result of general vasodilatation. Griffith and his co-workers have demonstrated that thiocyanate therapy is not effective in the presence of papilledema or when the minute vessels are sclerosed. This drug causes a satisfactory lowering of the blood pressure in 50 per cent of the cases treated and a symptomatic improvement in 70 per cent. It is,

therefore, worth a clinical trial when simpler measures are not effective.

**Dr. Evon Walker, Ottumwa:** It has been a great pleasure to listen to Dr. Anderson's discussion and he is to be congratulated and commended for his very scholarly, scientific and exhaustive presentation of a most timely, intricate and vital subject. Hypertension, either just vascular or essential, is of commanding interest to all medical men, the general practitioner, the internist and the surgeon, as well as the laboratory workers in experimental medicine. In addition, every layman is interested in his "blood pressure." Dr. Anderson has covered the subject so thoroughly and efficiently that there is little to add. Time will probably change some of the present concepts, as is always the case. Nevertheless, he has made a masterly presentation of the subject as it is today. It might be profitable to call attention to some of the rather common problems and errors in our diagnostic methods of the present time. The diagnosis of hypertension, per se, does not or should not present any great difficulties. It does require meticulous attention to details to obtain trustworthy findings. It seems that this fact is either not sufficiently understood, or carelessly overlooked. Of course, conditions and surroundings cannot be standardized completely; neither can the abilities of the physician making the observations. Furthermore, blood pressures are very labile. However, if proper precautions and care are taken it seems that blood pressure readings taken by different competent observers should be within reasonable agreement.

The highest point of a systolic reading is often difficult to obtain, and easily missed. The "auscultatory gap" is rather easily overlooked, and if it is, the result is an apparently lower blood pressure reading. This is really less serious than obtaining a much higher reading than is normal. An abnormally high systolic reading is frequently obtained if relaxation and cooperation of the patient are not secured. A patient who is hurried, one who is not physically and mentally comfortable, or who has not had his anxieties, fears and apprehensions relieved is certain to give an abnormal reading. The attitude and methods of the examiner are also of great importance. Like begets like.

Recently I had a case in point. The patient was an unusually well-balanced individual. His blood pressure was taken by his family physician, with a systolic reading of 158. Within thirty minutes it was also taken by an examiner for an insurance company. The latter obtained a systolic reading of 216, making a difference of 58 points. Both readings were made with Baumanometers (standard) in good condition. Why this difference? The neurogenic theory might best explain this particular case, yet who can say what effects the adrenal glands might have had? Fear arouses the adrenal glands to increased action. Or what of the vasomotor mechanism? I make it a point to average at least three blood pressure readings, taken on different days, before I feel that I have found a patient's normal blood pressure.

Essential hypertension is defined as "high blood pressure without antecedent inflammatory disease of the kidney or urinary tract." (Dorland.) Hypertension is defined by Allbutt as "elevated blood pressure without discoverable cardiovascular changes." (Dorland.) Benign hypertension is *essential* hypertension which exists for years *without producing symptoms*. (Dorland.) The whole set-up of hypertension seems rather involved; in fact, it is a distinct challenge to the medical world. It is true that Goldblatt's hypertension is very definite but it only covers a limited field. It does not explain hypertension entirely. Why should essential hypertension be divided into two classes, one with distressing symptoms, and the other, the so-called benign hypertension, without symptoms. What causes the symptoms? Why do the operations of Adson, Peet and others relieve the symptoms without materially reducing blood pressure in almost half of the cases?

Dr. Anderson's last paragraph, in which he quotes Aymen, then Volini and Flaxman, has a great deal in it to think about; otherwise, how can we explain the wonderful results obtained by so many drug combinations, exploited by their producers, most if not all of which have been "weighed and found wanting" both by doctors and patients? I had hoped that the doctor in his discussion of the management of hypertension would tell us about just one thing that would be really good upon which we could always depend. How happy he would have made us all.

## THE USE AND ABUSE OF SEDATIVES\*

CHARLES F. OBERMANN, M.D., Cherokee

The most used and abused drugs are cathartics and sedatives. For the purpose of this paper the term sedative is used in the broad sense including agents for quieting restless, agitated, noisy and sleepless individuals. Their use is widespread and not confined to the practice of neuropsychiatry since there is hardly a medical or surgical condition which does not involve the use of such agents. However, the remarks to be given here are from the viewpoint of a neuropsychiatric practice.

In any hospital for mentally ill and inebriate patients the problem of controlling overactivity is a major one. The extremes of activity often are associated with noisiness so that the problem is extended not only to the individual patient but often to a ward full of patients. As far as the individual patient is concerned, his overactivity must be controlled to prevent him from exhausting himself. In many patients in a mental hospital the ideal method of controlling restlessness is by occupational therapy. By this method, an

attempt is made to induce natural fatigue and composure by offering the patient some form of handiwork difficult enough to interest him and yet simple enough not to overtax him. However, it is not always possible to bring about the desired result by this method. Another valuable method is by hydrotherapy either in the form of continuous tub baths or wet packs. This form of treatment often acts as a quieting agent for excited maniacal patients. The number of patients who can be treated by this means is of course limited by the facilities available and is seldom possible outside of hospital practice. For this reason sedative drugs have a definite place in the practice of medicine. It is impossible in the scope of this paper to discuss all of the individual drugs which from time to time have been used as sedatives. The drugs listed in this paper are only those with which the writer has had some experience, and can be grouped as the barbiturates, bromides, paraldehyde, sulfones, chloral hydrate and narcotics.

### THE BARBITURATES

At the present time probably the most popular drugs used for sedation are the barbiturates, their derivatives and various combinations. Fischer and von Mering are generally given the credit for discovering the first drug of the barbituric acid series in 1903. This drug, chemically known as diethylbarbituric acid, was given the trade name of veronal and subsequently became known as barbital. From this beginning derivatives have been developed so that there are now over twenty drugs of the barbituric acid series listed in the American Medical Association publication, "New and Nonofficial Remedies". However, theoretically, it is possible to create some twelve hundred such compounds by chemical manipulation. These drugs are easily administered and are supposedly nontoxic. Because of their wide usage and the ease with which they can be obtained, there is a growing tendency toward self-medication to relieve insomnia, the effects of alcoholism, or for softening emotional distresses so that their use becomes an abuse. Since 1905 numerous cases of barbituric intoxication have been reported. In 1930 Webster summarized the works of many writers and observed that barbiturate drugs were the seventh most frequent cause of death due to poisoning. Overdoses are often taken with suicidal intention. For these reasons physicians should familiarize themselves with the danger associated with the use of these drugs. No doubt some legal measures should be taken to restrict more generally the sale of the barbituric acid preparations so that they could be sold only through a physician's prescription.

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Because of the great number of proprietary names given to barbiturates, there is considerable confusion in their use. However, they are all strikingly alike except for the speed of their action and the duration of the effect. If we consider the barbiturates manufactured by one pharmaceutical company alone we find many derivatives starting with barbital, which is generally considered the slowest and longest acting of the group, through phenobarbital, amytal, sodium amytal, pentobarbital, pentobarbital sodium and seconal, which is the fastest and shortest acting member of the group. As in the above case, the various pharmaceutical houses manufacture different barbiturates, varying the chemical formula and thereby varying the action. Furthermore, the various proprietary names given to these drugs tend to confuse the understanding of the actions they produce. For these reasons one must familiarize himself with the action of individual derivatives and use them judiciously according to his needs. In many hospitals it is common practice to give every new patient some form of barbiturate routinely on his first night in the hospital. No doubt the increased tendency for hospital patients to fall out of bed is due to the wide use of barbiturates. The dulling of perceptions, slowing and incoordination of muscular responses, impairment of the higher intellectual functions and sense of equilibrium which sometimes follow a dose of barbiturate are an even more important consideration in ambulatory patients. Driving an automobile, for example, while under the influence of a barbiturate, may involve the patient in a serious accident through his falling asleep at the wheel or his inability to summon his highest faculties in a traffic emergency. Another risk, which is fortunately infrequent, is that of unexpected reactions arising from an idiosyncrasy. This usually takes the form of an erythematous rash accompanied by fever which may persist for a week or more despite eliminative therapy. However, if one understands that these drugs cannot be given without mental reservation on the part of the physician, that they are not without dangers even in small doses, and that intoxication and psychosis may result from prolonged or excessive use, they still have a definite value. In addition to the effect of allaying cerebral activity or excitement, the barbiturates have special uses, and also may give rise to some special types of abuses.

It has been known for some time from experimental work, such as reported by Wolffe and Gantt in 1935, and from clinical observations, that certain of the barbiturates, especially the more quickly acting ones, have their sedative or hypnotic phase preceded by what appears to be a

phase of stimulation or excitement. This action has been explained in a number of ways, among which is that the most highly integrated centers are inhibited first, their control thus being removed from the lower centers which then function more freely. Be this as it may, we often make use of this reaction in what we call "sodium amytal interviews." By the administration of this drug, preferably intravenously, an otherwise resistive, uncommunicative patient may cooperate and give information about himself that is useful in making the diagnosis and in carrying out other treatment. This type of interview or observation of a patient's behavior in the pre-sedative phase often is used as an index to the prognosis and usefulness of pharmacologic shock therapy.

Sodium amytal often is useful as a substitute for tube feeding in those patients who persistently refuse food. In such cases, sodium amytal in water is given instead of the usual tube feeding and shortly afterward the patient is offered food, first by spoon feeding by the nurse-attendant. By this means the inhibition of the act of eating, arising from the patient's psychosis, may be suppressed, temporarily of course, but sufficiently to enable a re-initiation of normal eating habits. Following this procedure, the patient may continue to accept spoon feeding, thereby eliminating the dangers of tube feeding, or he may even resume voluntary eating, feeding himself. If this occurs the sodium amytal may be given orally for a period of time and later discontinued when the patient becomes reestablished in his natural manner of eating.

Another use for barbiturates in certain forms of mental illness is for the purpose of introducing prolonged narcosis. Various barbituric acid derivatives have been used for this purpose; however, our experience has been primarily with sodium amytal. Other sedative agents such as bromides and trional have been used to induce somnolent states in an effort to dislodge psychotic conditions. In 1930 Bleckwenn published his reports of encouraging results in the treatment of neuropsychiatric conditions by sleep produced by sodium amytal. Since that time many workers have contributed to literature on the subject. Included in these contributions are the articles of Lindemann and Malamud at the Iowa Psychopathic Hospital in 1934, Thorner in 1935, Broder in 1936, and Palmer and Braceland in 1937. The tendency is to use psychotherapeutic measures in connection with sedative agents.

A following case illustrates the use and value of sodium amytal narcosis. An unmarried school teacher, twenty-four years of age, was admitted as insane on August 16, 1936. The family history

was negative. No unusual developmental history was obtained. After graduation from high school at seventeen years of age, she took a two-year course in a teachers' college, then taught primary grades for two years. Her mother described her as a lively type of person, a good mixer, fond of dancing and singing. She had mentioned a desire to give up teaching and be a professional entertainer. The past medical history was not contributory. A week before commitment she returned home from a strenuous week of vacationing including late hours and drinking. During the next few days she gradually became more peculiar, threatened to run away, argued with neighbors and finally became so noisy and violent that commitment became necessary. On admission she sang and danced, ran about her room and resented attempts to interview her. Physical and laboratory examinations were normal throughout. She received the diagnosis of manic depressive psychosis; manic type. She was given sedative hydrotherapy. After five weeks she improved slightly and was transferred from the admission ward, but a week later again became hyperactive and noisy. With resumption of hydrotherapy she made a slow improvement but the attack continued for three months before convalescence was established. She then gradually regained her normal mental condition, was released on parole five months after admission and discharged as recovered a year later.

She was admitted for the second time in March, 1939. Her interval history was that after going on parole in January, 1937, she rested at home for a few months but started teaching school that fall. She completed the school year satisfactorily, took a vacation trip in the summer of 1938 and again started teaching in the fall. She made good progress until March, 1939, at which time she had an attack of "flu" while accompanying a high school group to a basketball tournament. After a few days at home she returned to her school duties but after one day was unable to continue, became talkative, restless and was recommitted after several days of unsuccessful attempts to care for her at home. On admission she was talkative, disoriented and restless. Physical and laboratory findings were again essentially negative. The day following admission she was started on sedative wet packs and a schedule of sodium amytal. Beginning with three grains every three hours the schedule was gradually increased to nine grains every two hours over a period of a week. The treatment was continued with variation of the dosage schedule, never exceeding nine grains every two hours. During this time she was given very close nursing care including daily enemas, spoon

feedings and a check of blood pressure every two hours, with a systolic pressure below 90 being regarded as a warning sign calling for omission of the dose then due. After six weeks the treatment was discontinued, the patient having shown several days of quiet and cooperative behavior. Twelve hours after discontinuance of medication she had a convulsion, followed by several hours of mental confusion. The next day she was quiet and cooperative. Under continued observation this proved to be an abrupt and well-maintained return to her normal mental condition. She remained well, was released on parole eight weeks following admission and was discharged as recovered a year later.

This case illustrates two manic attacks in the same patient, the second of which was treated by sodium amytal narcosis resulting in a shortened attack and elimination of a long-drawn convalescence. The approximate time differences between the two attacks are as follows:

	First attack	Second attack
Duration of attack.....	12 weeks	6 weeks
Duration of hospitalization.....	20 weeks	8 weeks

The fact that the patient above reported developed a convulsive seizure after withdrawal of the medication suggests another phase of the use and abuse of the barbiturates. It is well known that the sudden withdrawal of barbiturate medication in an epileptic case often precipitates an increased convulsion rate. An epileptic patient who for a year or more has been kept entirely free from convulsions on even as little as 1.5 grains of phenobarbital will, if the medication is suddenly withdrawn, be very likely to show one or more convulsions soon thereafter.

A less appreciated fact is that if a non-epileptic patient is suddenly deprived of a moderate to heavy schedule of barbiturate, a convulsive seizure of the grand mal type is often precipitated. This usually occurs within twenty-four to forty-eight hours after the medication is stopped, seldom consists of more than one convulsion, but may be followed by a transient clouded mental state similar to that of idiopathic epilepsy. In a number of mental cases in whom this phenomenon has been incidentally produced, it has been followed by an abruptly favorable turn in the course of the psychosis. From this may be drawn a certain parallel with recognized forms of convulsive shock therapy, although it is doubtful that the production of convulsions for the deliberate purpose of therapy in this manner is either practical or advisable.

The rôle of barbiturate withdrawal in precipitating convulsions is of some importance in the differential diagnosis of epilepsy, as illustrated by



the following case. A housewife, twenty-eight years of age, after competent study by several physicians, was diagnosed as having an epileptic psychosis and committed as a mental case. The family and past medical history was negative. The personal history contained a number of adverse factors, including a pampered up-bringing and a hasty marriage. Her personality was characterized by a narrow range of interests along with childlike clinging to her husband. The known history was that she had been hospitalized on three previous occasions for attacks of the following pattern: each of these had been precipitated by a generalized convulsion followed by a day or more of clouded mental condition during which she screamed obscene and irrational accusations to persons around her and showed agitated behavior, requiring several persons to control her. Following admission to the Cherokee State Hospital, she remained quiet and cooperative. Physical and laboratory examinations showed nothing of importance. At interviews there was no evidence of psychosis, although she showed slight memory gaps for general information, which later cleared up. Her progress in the hospital remained good, she showed no convulsions, received no sedatives, gained weight and developed a bright, hopeful attitude. She was transferred to a convalescent ward, participated energetically in various patient activities, and was released after a hospitalization of eight months. Correspondence with the home physician revealed the additional information that for a year or more she had been addicted to nembutal, which she bought in drug stores and took in a manner known only to herself. It was believed that at times she took from seven to nine capsules daily. Efforts to rid her of the addiction under home conditions were hampered by the fact that she could not be watched continually and would slip out to the corner drug store to buy the drug. The time-span covered by her above described attacks was found to correspond with the drug addiction.

In the treatment of chronic alcoholism barbiturates are sometimes useful during the period of alcoholic withdrawal. This must be regarded as symptomatic treatment, since the biochemical action of the barbiturate is not directly beneficial to the patient, and may even have some detrimental action on his nervous tissue. However, the controlled use of a barbiturate drug becomes of value when it is necessary to relieve the restless, apprehensive condition of an alcoholic patient. It is important to keep such a patient under strict control and to prevent the medication from falling into his hands. The physician in office practice may inadvertently do extreme harm or even con-

tribute to the patient's death from alcoholism by introducing a chronic alcoholic to the self-abuse of barbiturates. The factor of drug addiction may simply be added to the already existing alcoholism, resulting in a very malignant and possibly fatal combination. By using the barbiturate artificially to bolster his tolerance for alcohol, the patient may consume alcohol in amounts he would have otherwise found impossible, and through the combined toxic effects of both alcohol and drug, may over a period of a few months or years follow a course equivalent to suicide. This danger is illustrated in the following case.

In August, 1936, a married superintendent of an industrial plant, forty years of age, consulted a private physician, complaining of weakness, nausea, headache and feelings of restless apprehension. He gave a history of using six to eight ounces of whiskey daily for eighteen years. He was given phenobarbital, one-half grain three times daily, and glasses were prescribed. He returned in three weeks, still complaining of restlessness and abdominal discomfort. He was hospitalized in a private hospital, receiving various special studies, all proving essentially negative. He made several more visits to the private physician, continuing to complain of weakness, apprehensiveness and fear of meeting people. Nembutal was prescribed. In December, 1936 he went to a prominent psychiatric clinic, where he received the diagnosis of psychoneurosis; compulsion neurosis and alcohol addiction. Prolonged treatment was advised, but he insisted on going home and staying with his work. By May, 1937 he was taking four 1.5 grain capsules of nembutal daily. He returned to his private physician, showing irregular, rapid pulse and marked tremor of the extended hands. Tests of basal metabolism rates gave results of plus 28 and plus 33. He went to a prominent clinic, where a thyroidectomy was done. Following this, he showed several months of improvement. In August, 1937 he called his doctor, complaining of feeling "all in". He was still taking several capsules of nembutal daily, along with whiskey. In September and October, 1937 he called his doctor on two occasions because of sleeplessness and was given sodium luminal. About this time he showed an episode of transient auricular fibrillation, gross tremor of the hands, slurred speech and absent knee jerks. Vitamin B was given with some benefit. In December, 1937 he began to complain of numbness in his feet. He insisted on working and reached an intake of a pint of whiskey daily along with four to six 1.5 grain capsules of nembutal. In January, 1938 he entered the Cherokee State Hospital as an inebriate case. Physical examination

revealed a tall, undernourished male. The eyes showed horizontal nystagmus in either direction, marked impairment of vision, sluggish light reactions and absence of accommodation. The chest and abdomen presented no significant defects. The neurologic examination showed good muscular strength throughout; deep reflexes were normal in the biceps and patellar jerks, but ankle jerks were absent. There was absence of pain sensation below the knees, and the toes showed absence of pallesthesia with marked impairment of position sense. The Romberg test showed marked swaying. During examination he exhibited constant muscular twitchings and jerkings whenever his body was touched or sudden movements made. During the interview he was restless, apprehensive and showed alarm over his condition, but no defects of memory or judgment were elicited. Laboratory findings, including blood and spinal serology, urinalysis, blood counts and spinal fluid examinations, were normal throughout. He continued to feel restless, apprehensive, and to complain of poor vision and numbness of the feet. He was given vitamins without benefit. Three weeks after admission he developed severe diarrhea and a few days later active delirium with vivid auditory and visual hallucinations. Despite treatment with additional vitamins, sedatives, whiskey and intravenous fluids, he failed to improve. Ten weeks after admission he suddenly developed a fever of 106 degrees, failed to respond to emergency treatment and expired a few hours later.

In the hospital treatment of narcotic addiction, barbituric drugs help to smooth over the restless, uncomfortable period following withdrawal of the narcotic. The procedure consists of placing the patient on a definite schedule of the barbiturate, starting with a dosage just sufficient to give the patient rest and comfort. Within a few days, reduction of the barbiturate dose is started. The barbiturate is then withdrawn gradually, but at the same time as rapidly as the patient's condition will permit. In this process, one must be guided by objective findings such as tremor, pulse and other nursing observations, and not by the statements of the patient, who almost invariably will complain that he needs more medication than is actually the case.

The use of barbiturates in the treatment of alcoholism or narcotic addiction is justifiable only when accompanied by effective steps to withdraw the alcohol or narcotic just as rapidly as the patient's condition will permit. If, during office treatment of alcoholism, the physician finds that the patient is continuing his use of alcohol along with barbiturate, this should be regarded as a

serious threat to the patient's future or possibly even his life, and an adequate period of hospital care should be demanded before it becomes too late to bring the situation under control.

The self-administration of barbiturates is common among narcotic drug addicts, who often resort to barbiturates as a substitute for narcotics when they are unable to obtain the latter. Rarely, however, does one see an addict change permanently from narcotic to barbiturate addiction. Cases are seen at times when the addicts, in their desperation for rapid effects, will attempt to inject hypodermically the contents of a capsule of barbiturate. This results in necrosis, ulceration and sloughing. One such patient had submitted to such an injection into her little finger with resultant gangrene, requiring amputation of the finger. From the above it has been shown that the barbiturates are valuable therapeutic agents not only in general medicine but have a special use in certain mental illnesses. Their abuse lies primarily in self-medication and indiscriminate prescribing.

The treatment for mild barbiturate overuse is withdrawal of the drug. For more severe intoxication Weiss, Fantus and Richards describe detailed treatment. They recommend gastric lavage with warm saline, followed by 30 to 60 grains of magnesium sulfate while the tube is in place, keeping the head lowered to avoid aspiration pneumonia; frequent change of the patient's position to prevent hypostatic congestion; hot coffee enemata; five per cent dextrose intravenously; catheterization every four to six hours; artificial respiration if indicated; injection of caffeine sodium benzoate intramuscularly every two hours; and intravenous doses of strychnine nitrate if indicated. Several writers, including Haubrich and Reese advocate the administration of five to ten cubic centimeters of 25 per cent aqueous solution of coramine intravenously. Wagner and Linegar recommend the giving of five to ten milligrams of picrotoxin, a five to ten per cent solution in distilled water intramuscularly or intravenously. Purves-Stewart and Willcox recommend withdrawal of spinal fluid by lumbar or cisternal punctures. They also advocate giving cardiac stimulants, such as digitalin and strophanthin. For the restless, hypomanic states hydrotherapy in the form of continuous baths and wet packs is beneficial. Sedatives should be withheld. The recent drug, metrazol, is advocated as a pharmacologic antagonist of barbiturates.

With the advent of the barbiturates some of the older sedatives such as the bromides, paraldehyde, sulfones and chloral hydrate have fallen into undeserved disuse.



## THE BROMIDES

The bromides depress the intellectual and motor areas. Although they are in disrepute at the present time, they should not be discarded. They produce mental calm and may be followed by sleep. Their anticonvulsant action is of value in some cases of epilepsy. The average adult dose is ten to fifteen grains; however, they can be given in doses up to sixty grains a day. They are rapidly absorbed but slowly eliminated, principally by way of the urine. Therefore, there is a marked tendency toward cumulative action which may lead to bromide intoxication and psychosis. The chemical efficiency of bromides is increased by limiting the salt intake, and in case of bromide poisoning an increase of sodium chloride either by mouth or intravenously is a part of the treatment. Bromides can be purchased for self-medication without prescription. In mental hospitals epileptic patients are often admitted to mental hospitals with psychotic symptoms which may be due to mail order cures consisting of medicine made up of bromides.

## PARALDEHYDE

Paraldehyde is a colorless liquid with a characteristic odor and disagreeable taste. The average dosage is from three to fifteen cubic centimeters. It may be administered by mouth or rectum. It also is used intravenously but this method of administration is not without danger. Paraldehyde has prompt action, usually within fifteen to thirty minutes after administration, and usually is without any after-effect except for an odor to the patient's breath, since it is excreted partly through the lungs. The acute toxicity of the drug is low but tolerance is generally acquired. Habit formation is not infrequent and overuse may result in a picture of chronic alcoholism with delirium tremens.

## THE SULFONES

Sulfonal and trional are powerful drugs. They are not used as much as formerly because they act slowly and have a tendency to cumulative effect. Fatal poisoning has been reported in the therapeutic doses. Hematoporphyrinuria has been reported frequently following their continued use.

## CHLORAL HYDRATE

Chloral hydrate was the first synthetic hypnotic agent. In small doses it depresses the higher cerebral centers. In larger doses there is also depression of respiratory and vasomotor centers. However, the risk because of these actions has been overrated; it remains one of the most reliable of sedative agents and is useful in the management of agitated and convulsive states. It is administered by mouth or rectum in amounts up

to forty-five grains, with fifteen grains being the average adult dose. It acts within fifteen to twenty minutes. Usually there are no ill after-effects. Tolerance and cumulative effects are minimal. Although not common, habituation may develop, and may result in symptoms similar to chronic alcoholism.

## MORPHINE AND HYOSCINE

Morphine should not be used for ordinary sedative purposes because of the danger of addiction. Its use is reserved for cases in which pain and cough not controllable by other drugs are the disturbing symptoms. Occasionally in an acute manic condition the combination of morphine and hyoscine may be of great value in quieting and controlling the patient. Hyoscine hydrobromide is often found valuable in excited, uncooperative patients because it can be given hypodermically, with prompt action.

## SUMMARY

1. In the field of sedative drugs, the introduction of barbiturates has brought a new era, and with it new uses and abuses of this type of medication.
2. Commercialism, with its variety of trade names and advertising, tends to confuse the relative characteristics of various barbiturates.
3. The dangers of barbiturates lie in their indiscriminate and excessive use. They may provide the means of suicide, addiction, drug psychosis and perpetuation of other types of addiction such as alcoholism and morphinism.
4. There is need for legislation to make the sale of barbiturates contingent on a physician's prescription. Until such legislation is passed, physicians should make every effort to protect patients from indiscriminate self-medication with drugs of this kind.
5. The differential diagnosis of epilepsy should include consideration of convulsions caused by sudden withdrawal of barbiturates in a non-epileptic case.
6. Some of the older sedatives have definite merit and should not be discarded in favor of barbiturates.

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### Discussion

Dr. Albert A. Schultz, Fort Dodge: The use and consequently the abuse of sedatives have become widespread in the past twenty years, due to the greater number of anxiety states and related disorders with which we have to contend. This is undoubtedly the result of the economic uncertainties and social dislocations which have occurred during this strenuous period of time.

The essayist has properly pointed out that sedative drugs should not be available to the laity over the drug counters, because self-medication of psychotic and neurotic individuals and addicts inevitably leads to disastrous results and a marked increase in the incidence of poisonings. However, my observation indicates that these drugs are frequently used indiscriminately by the physician, and prescriptions are given to the patient for symptomatic relief without carrying on the proper survey before sedative medication is ordered. I do not believe a physician is any more justified in prescribing a barbiturate, bromide or chloral without the proper investigation of the patient than he is in prescribing morphine. In daily practice most patients who ask for sedatives are suffering from some anxiety reaction which needs a careful investigation, so that the cause of the psychologic maladjustment may be discovered. The cause and effect should be thoroughly discussed, the anxiety relieved and a readjustment made. As a result there will frequently be no necessity for prolonged treatment with barbiturates or other sedatives. It is certainly bad practice to take a very brief history, make a cursory examination and promptly dismiss the patient with a box of phenobarbital tablets. A thorough conscientious history and examination are good treatment in themselves. They rule out the possibility of organic disorders and engender confidence. Repeated reassurance and a sympathetic interest on the part of the physician are good sedatives, and often replace drugs in many cases. There are, to be sure, many patients, who to use an old quotation are "psychopathically and protoplasmically inferior" and they must be treated from a purely symptomatic standpoint as the occasion de-

mands. The only logical attitude toward the use of these drugs is that they should be administered as a "crutch" until such time as the patient can be readjusted to his environment.

Preoperative medication with barbiturates or related drugs is now a routine procedure and its value is definitely established, but I believe there is a tendency on the part of many surgeons to overlook the value of postoperative sedation. My observation indicates that morphine is used too freely, and many times without the proper indication postoperatively. Carter and Broad studied one hundred patients with the purpose of determining the value of routine postoperative sedation. Fifty-nine patients received barbiturates in routine doses and forty-one no regular sedation. Their conclusions were as follows: "Distention and gas pains, as indicated by cathartics and enemas given, were more pronounced in the group not receiving barbiturates. Coughs were markedly more frequent in the patients not receiving phenobarbital. The patients with abdominal cases receiving routine sedation were discharged from the hospital an average of four days earlier than those not receiving the sedative as routine. In addition, patients receiving the barbiturates as routine seemed more comfortable and less disturbed during convalescence than those without that therapy. The authors believe that the decrease in distention and coughing was of benefit to the patients receiving barbiturates, not only in lessening their distress but in being of some import in their recovery. Also, the patients' sense of comfort and peace of mind are enhanced by routine sedation. There has been no tendency for patients to seek further sedation after the drug is stopped, either before or after discharge from the hospital."

Morphine is an indispensable drug in the armamentarium of the physician, but frequently the indications and contraindications for its use are not thoroughly appreciated. Morphine as a general rule should be used only for severe pain, perhaps to allay severe cough, and to relieve paroxysmal cardiac dyspnea where its action is specific. It should seldom be used for hysterical attacks or emotional explosions and it is a very dangerous drug to use in bronchial asthma.

It is not generally appreciated that when barbiturates, chloral or paraldehyde fail to quiet a manic or very delirious patient, hyoscine hydrobromide, grains 1/200 to 1/100, will frequently do the trick, and in these extreme cases its combination with morphine seems to enhance its value.

Barbiturates should be used with caution in elderly people because so many of them react very unfavorably. In these cases I much prefer the use of chloral hydrate and I have not observed any depressive effect when it is used in the proper dosage. Chloral hydrate in dilute solution flavored with orange juice acts within thirty minutes and is reliable. I agree with the author that the risk of depressing the cardiac muscle is much over-rated.

The author's observation on the use of sodium



amytal or similar drugs in the treatment of maniacal psychosis and for exploration of the mind by means of sodium amytal interviews is of real interest to the clinician in private practice because in general hospitals we are frequently called upon to treat these psychotic individuals for varying periods of time and this new therapeutic method should and can be used by the private practitioner under properly controlled conditioning.

Dr. Leslie E. Weber, Wapello: After hearing this very excellent paper and most enlightening discussion, there is not very much more to add. I think, however, too often we do not make the proper choice of sedatives in seeing a patient. If we would remember more of our chemistry, knowing the composition of our sedatives, such as the qualitative and the quantitative substance, I believe we could be of greater value. We should know the toxicity, the acute toxicity, the tolerance and the chronic toxicity, as well as the dosage level we may establish. We should know the absorption and elimination effects. The absorption time is very important because too often, especially in country practice, a physician will administer a sedative, and before he has returned to his office the family will call to say there was no action. If they are told to repeat the dosage (the physician not understanding or not remembering the absorptive limit) the result may be too much sedation.

Another important item is the manner of excretion, the effects on the kidney, liver and the gastrointestinal tract. The effects on the other drugs or foodstuffs which the patient may have taken, such as with alcoholism, play an important part in the choice of the sedative. The idiosyncrasies or the untoward reactions which may be present, are perhaps the most important things we forget.

I believe with Dr. Obermann that some sort of legislation to limit the use of the barbiturates would prove of value not only to the medical profession but to the laity as well.

#### MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Medical Economics Committee  
September 4, 1941

The Medical Economics Committee of the Iowa State Medical Society met in the central office Thursday afternoon, September 4, 1941, with the following members present: Doctors E. E. Shaw of Indianola, T. F. Thornton of Waterloo, Charles T. Maxwell of Sioux City, B. B. Parker of Centerville, and H. M. Ivins of Cedar Rapids.

The committee discussed two collection agencies which had applied for cards of approval, but did not grant them. It also voted to adopt the policy of not giving cards of approval to national types of collection agencies.

The survey on medical relief plans was discussed and it was decided that it should be continued. A motion to this effect was passed, and the meeting adjourned at 3:15 p. m.

#### SOME PROBLEMS IN ANESTHESIA

FLORENCE D. JOHNSTON, M.D., Cedar Rapids

Originally the anesthetist's job was merely to keep the patient from feeling pain. Next it included helping the surgeon by relaxing the musculature. Only recently has the third duty come prominently to our attention, namely, to look out for the oxygen needs of the patient.

The real importance of oxygen lack, or anoxia, was first pointed out by Courville<sup>1</sup> in 1936. He published a report of thirteen cases of cerebral damage following nitrous oxide anesthesia, nine of them fatal. Those who survived had damaged brains, with spasticity, blindness and other evidences of neurologic injury. Autopsies showed patchy degeneration of the brain and its stem in all who had survived the anesthesia and operation for more than twenty-four hours. Other writers pointed out similar results following the use of other anesthetic agents. Courville has recently<sup>2</sup> reported brain degenerations following the use of ether for patients with complications causing anoxia. From the first, Courville has maintained that these degenerations were not due so much to the anesthetic agent as to anoxia. The reason so many cases appeared after the use of nitrous oxide is that anoxia is particularly likely to be present with that agent.

We have been hearing a great deal about "ether convulsions." The most recent opinions are that they are due to anoxia. Formerly they were blamed on the high temperature of the patient, excessive heat in the operating room, alkalosis or ketosis, over-atropinization, low blood sugar, toxemia and other causes. Low blood sugar is often present in appendicitis patients who have been given no food during hours of observation. All of these unphysiologic conditions tend to increase oxygen demand or to decrease its utilization. Beecher<sup>3</sup> studied thirty papers reporting cases of ether convulsions published from 1928 to 1938 and noted certain features in common among these patients. "All were young (children or young adults) with high oxygen requirements due to the high metabolic rates of the young. Almost invariably they were in a condition of toxemia. We know from frank asphyxia in man as well as from experimental work in animals that anoxia can produce ether convulsions." Beecher quotes Haldane that anoxia "not only stops the machine but wrecks the machinery."

Anoxia or lack of oxygen in the blood and tissues may be acute enough to cause sudden death, or the cerebral changes first described by Courville, or dilatation of the heart, which can be demonstrated by x-ray. Anoxia may also cause com-

plications of surgery which may not be blamed on the anesthetic in any way. Among these complications are shock, circulatory failure, atelectasis and postoperative pneumonia, liver degeneration, renal failure, thrombosis and embolism. There are other causes for these conditions but anoxia plays its part.

Shock is being studied minutely these days. We no longer believe that surgical or traumatic shock is a manifestation of vasomotor failure. Indeed the arterioles are tightly contracted early in the shock picture, so much so that it has been questioned whether adrenalin, ephedrine and neosynephrin should be given for surgical shock.

The fall of blood pressure in spinal anesthesia is very different from the fall of blood pressure in shock. With spinal anesthesia the usual explanation (recently questioned) is that throwing out increasing numbers of vasomotor nerves causes vasodilatation and blood pressure fall. Here adrenalin, ephedrine and neosynephrin (particularly the last two) are valuable as preventive agents and of some use therapeutically after the blood pressure has fallen. The decreased blood pressure of spinal anesthesia is self-limited provided the patient is given oxygen so that anoxia does not complicate the picture. Shock is not a self-limited disorder but a vicious circle which readily becomes irreversible.

What then is shock (due to trauma or surgery) if not vasomotor failure? It is a relative inadequacy of the circulating blood stream to the size of the stream bed. Early in shock there is stagnation of blood in the capillaries with an increase of permeability. The next step is the departure of fluid and colloids from the circulating stream through these capillaries, with concentration of the blood. Fluid passes through the capillary walls at four times the normal rate after only three minutes' lack of oxygen.

Grodins and Freeman<sup>4</sup> state that in shock the arterioles are in a state of maximal contraction and that there are "Two major factors involved in shock; first, capillary atony and stasis; and second, anoxia. Either factor sets the other into operation and sets up a self-perpetuating cycle." Capillary stasis causes a diminished venous return and this in turn causes a diminished minute output from the heart even though the pulse is unduly rapid. The heart is not primarily at fault; shock is *not* heart failure. The heart beats rapidly but has an inadequate content of blood to work on and so it works inefficiently. The result is heart inefficiency but not heart failure. Anoxia now develops because of lack of circulating blood. Blood pressure also drops because of lack of blood in the heart and vessels and in spite of contracted

arterioles and collapsed veins. Anoxia in time causes failure of the vasomotor system but this vasomotor failure is the result, not the cause of shock. Vasomotor failure further expands the stream bed and makes the circulating blood volume even less adequate. The vicious circle is in full swing. Anoxia causes the respiratory center to become less sensitive to normal physiologic impulses, breathing stops and the cardiac center fails only a little later.

The anesthetist's part in this picture is to avoid those factors which contribute to the early stages of shock. It is the anesthetist's duty to avoid prolonged deep anesthesia and anoxia, and to detect early changes of shock and take appropriate measures. The poor risk patient can often be tided over the insult of surgery with careful preoperative care and with a transfusion or glucose solution running intravenously during the operation. This maintains the adequacy of the circulating volume and interrupts the shock tendency at an early stage. The anesthetist who is watching the patient's blood pressure has an early warning that the shock picture has begun to develop and can institute measures such as increasing the oxygen intake, lowering the patient's head slightly (to maintain good circulation to the vital centers), administering intravenous fluids, applying heat to the patient's feet, and terminating the operation early if the patient is not responding to the steps that have been taken.

It will be noted that I have not mentioned stimulants other than oxygen. We feel very comfortable when we have given stimulants, but the most careful study of the pathogenesis of shock does not encourage this complacency. Why stimulate the vasomotor center when the arterioles are tightly contracted? The capillary bed that is stagnant and dilated has no vasomotor fibers. Indeed excessive contraction of arterioles only adds to the work of the heart in maintaining what circulation it can. As a temporary expedient I do use neosynephrin, but less than formerly and I am critically examining results. Ample oxygen delivered to the lungs by a free airway will do much to prevent the development of shock and is basic to the treatment of shock along with the provision of adequate circulating blood volume.

Some points in preoperative care will bear repeating. The patient who enters the hospital on the morning of his operation does not take as smooth an anesthetic as the patient who has been hospitalized for at least one night. It is also helpful for the patient to make the acquaintance of the anesthetist before the time of the operation, and the anesthetist can usually gauge the amount and kind of sedation better than anyone else. We



often give the preoperative hypodermic too late for it to be fully effective. A young person should have his hypodermic an hour before the operation is scheduled to begin. One and one-half hours should be allowed for middle-aged people, and two hours for the aged.

Scopolamine supplements morphine better than does atropine. Scopolamine dries the salivary and bronchial secretion, offsets some of the unwanted action of morphine and contributes to sedation. Scopolamine at one time had a bad name because of its being confused with hyoscine and because we often used stale scopolamine. If we buy ampule scopolamine which is fresh we do not see idiosyncracies to this valuable drug. It should be used in the proportion of one twenty-fifth of the amount of morphine. The preliminary sedation should be prescribed with the agent and kind of anesthesia in mind. A barbiturate should be given before the use of novocain and drugs of that series.

Doubtless we should use oxygen postoperatively much more frequently than we do. In some hospitals all toxic thyroid patients are given oxygen for several days after thyroidectomy. Even where the oxygen demand is not increased, as in hyperthyroidism, there is likely to be oxygen lack from depressed breathing postoperatively, from sedation and from anesthesia. This may turn the tide against a poor risk patient. Depressed breathing also causes atelectasis and it is probable that much of what we have, in the past, called postoperative pneumonia is really atelectasis, at least in its beginning. Tight surgical dressings and too prolonged anesthesia, and failure to put air or nitrogen back into the bases of the lungs, and too heavy postoperative sedation all promote atelectasis and other lung complications.

Lung abscesses can readily be caused by inattention on the part of the anesthetist. The giving of a general anesthetic to a patient whose stomach is not empty is a dangerous procedure, but one that is sometimes necessary. The head should be lowered if there is gagging, the mask removed and the throat cleaned out with suction, which should be readily available. Too deep anesthesia for tonsillectomies is a cause of inhalation of blood and mucus with plugging of bronchi, atelectasis and possibly pneumonia or lung abscess. Let the gag reflex be just around the corner and keep the head lowered. Many anesthetists like to keep the tonsillectomy patient on the table until the first emesis so that they may deal with it themselves.

Liver damage may be caused by certain anesthetic agents, notably chloroform and trichloroethylene, and to a less extent, ether and avertin. Liver degeneration is much more likely to occur

in an obese individual or one with low liver glycogen; it is sure to occur with prolonged anoxia. Preventive measures with known liver impairment are first, the preoperative use of all available vitamins, especially Vitamin K; second, glucose; and third, bile salts where indicated. The selection of an anesthetic agent which does not depress liver function and the provision of adequate oxygenation are other preventive factors. I believe we are soon going to have excellent new aids in the prevention of thrombosis and embolism and that they will be along the line of increasing the clotting time of the blood in selected cases where these circulatory complications are most to be feared.

We have been saying over and over "avoid anoxia, provide a free airway, supply ample oxygen." Let us apply this to our every day work in anesthesia. In regard to ether, are there too many thicknesses of fluffy well laundered gauze on the mask? Authorities advise six to eight layers, just enough to avoid the dripping of ether. This is especially important with a child or very weak patient. What are we doing with the wet towel? It is legitimate to use it to aid the fit of the mask to the patient's face but not to build up increased carbon dioxide. Even an ether mask increases the dead air space of the respiratory system and upsets the physiology of breathing. One should never make a deep cone with the towel nor cover much of the gauze. Building up of carbon dioxide is dangerous, since it is heavier than air and pools in the dead air space of a mask piled up with towels; it also accumulates in the patient's lungs. Blood which is high in carbon dioxide is low in oxygen, and can cause irreversible tissue changes in the heart or brain during the course of an anesthetic.

Why are we so loathe to use a simple pharyngeal airway with our everyday ether anesthesia? It keeps the tongue from cleaving to the palate and keeps the relaxed lips from collapsing valvelike to shut off oral breathing. It keeps the jaws a little open. One should be very careful to provide a free airway for the edentulous patient. Teeth prop the mouth open and help maintain an airway and unobstructed pharynx, especially when a simple airway is placed between them. A rubber airway is much preferable to a wire one since it can be slipped out if the patient is waking and bites on the airway.

Avertin is enjoyed by the patient if it means that he can go to sleep in his bed. It has certain special disadvantages. The anesthetist must figure on spending about forty-five minutes' time before the incision is made. It takes time to calculate, mix and test the solution, to go to the patient's room and give the avertin slowly, very

slowly. It takes time for the patient to absorb the solution and be moved to the operating room. If the avertin fluid is given in a minor operating room the patient has not been spared all knowledge of going to surgery. Wherever it is given the anesthetist should have an airway near which can be slipped in as soon as it is tolerated. Avertin causes shallow breathing and low blood pressure and is a ready source of anoxia. Avertin keeps the patient's breathing depressed for some time, and this is not desirable from the point of view of anoxia and its sequelae. It is not a safe complete anesthetic but is only basal. Neosynphrin will offset the drop in blood pressure and coramine is useful to shorten the prolonged post-operative depression.

I believe that avertin, like spinal anesthesia, is safe only if oxygen is readily available to take care of the occasional severe reaction. Avertin and spinal anesthetics are not fractional or reversible as are inhalation anesthetics. We use them. They have their proper place; but one must be prepared to handle quickly any emergencies which may arise.

How are we to recognize oxygen lack during anesthesia, and carbon dioxide increase which so often accompanies anoxia? Cyanosis is not a good criterion. Dr. Ralph Waters,<sup>5</sup> who spoke to the Linn County Medical Society a year ago, states that cyanosis is present in less than twenty-five per cent of cases of oxygen want. Furthermore, the full-blooded patient under nitrous oxide may be dusky and yet not lack oxygen. A violet or blue patient is more likely to lack oxygen than is a pink patient. Symptoms of oxygen lack and carbon dioxide increase may include any of the following: alterations in the pulse, dilated fixed pupil, dry cornea, depressed or irregular or sighing respiration, raised systolic pressure, changes in pulse pressure, muscle twitchings or convulsions, cyanotic or ashen color, anxiety, restlessness, delirium, air hunger, vomiting and retching, increase of moisture in the lungs. The prevention consists of intelligent preoperative care of the patient, the individualization of preoperative sedation, the use of airways, the support of the patient's chin (with a finger constantly on the pulse) and constant minute watchfulness. The blood pressure, pulse and respirations should be followed and recorded at the time and not guessed at and written down after the operation. It is hazardous to give any general anesthetic with a closed system of complete rebreathing from a bag without knowledge of the patient's blood pressure. It is also inviting trouble that may make the surgeon's best efforts of no avail for the anesthetist to give even open drop ether to a poor risk pa-

tient or to any patient for a very serious procedure without constant watchfulness and interpretation of the blood pressure.

I want to mention briefly five cases of death during or soon after anesthesia which have occurred in a local hospital in a period of twelve months. In doing this any anesthetist is very humble because the loss of a patient comes to all anesthetists sooner or later. Perhaps we can formulate ideas from these cases which will help to avoid the accidents that can happen and have happened to every anesthetist.

Case 1. A female, eighteen years of age, was operated upon for squint, under open drop ether and died toward the end of the operation. An autopsy showed persistent thymus, hyperplastic spleen and enlarged lymph nodes. Death was due to status thymicolymphaticus, surgical shock and anesthesia. This was an unpredictably poor risk patient. An ether drop anesthesia for any eye case has great difficulties. The good eye is covered, as is the face, so that the size of the pupil and the patient's color are not constantly observed. The drapes cover the nose and mouth. The anesthetist can keep one hand under the drapes holding the jaw, with an airway in the mouth and pharynx. The fingers can feel the throat for swallowing if the anesthesia is getting light. The other hand can be used for dropping ether, for charting and to lift drapes and observe the pupil and color. The fingers on the throat must rest very lightly. Members of the surgical team should be cautioned against resting any weight on the patient's chest or neck.

Case 2. An obese female, fifty-two years of age, with an umbilical hernia, was anesthetized with nitrous oxide plus oxygen plus ether. These are only fair risk patients at any time. This patient died after one and one-fourth hours on the table and death was ascribed to surgical shock, anesthesia and possibly pulmonary embolism.

Case 3. A male, forty years of age, had bled profusely and had a compounded fracture of the tibia and fibula on the right and of the os calcis on the left. There is no anesthesia record of this patient and no record of temperature, pulse, respiration or blood pressure until the patient was back in bed, cyanotic and pulseless, after the setting of the fractures under ether. Two hours later the respirations were 60 and pulse 140. Three hours later the first blood pressure recording was set down. It was 80/50. An hour after surgery the temperature was 103 degrees. The rapid rise of temperature is very suggestive of cerebral damage due to anoxia. In a few hours the axillary temperature was 103.8 degrees, and seven and one-half hours after surgery the patient died.



Death was attributed to "shock." I wonder how much the anesthesia was to blame along with hemorrhage and surgical shock in this case. No anesthesia record may be more honest than the figures written down from memory after an hour or so of anesthesia.

Case 4. A male, fifty-nine years of age, with bilateral inguinal hernia and a blood pressure of 240/140 came in because of renal colic. He was operated upon a few days later for bilateral hernias, under nitrous oxide plus oxygen plus ether. After thirty minutes of the operation respirations ceased and then the pulse.

This case leads to a discussion of classifying our risks before surgery. The simplest method is to use three classes; the good risks, the fair risks and the poor risks. For brevity one can use A, B and C. The following classification is offered by the International Anesthetic Research Society: "A. The good risks; patients free from organic disease, whose surgical condition is not likely to prove fatal. B. The fair risks; patients suffering from organic disease but whose surgical condition is not especially serious. C. The poor risks; patients whose surgical condition is so serious or so far advanced as likely to result in fatality."

A man dyspneic on exertion with some heart pain, recent renal colic, frequent nose bleeds and a blood pressure of 240/140 (all of which were recorded by the resident before the operation) is certainly a C or poor risk. I am sure his doctors regretted that they had not left him his hernias without operation. If such a patient has a strangulated hernia and operation is necessary a local anesthetic would be safest, with the briefest possible use of some general anesthetic if necessary. Under any circumstances the state of the blood pressure might well be watched and recorded at the start of the anesthetic and every five minutes as the operation proceeded.

Case 5. A woman, thirty-eight years of age, refused operation for a hyperplastic goiter which was treated by rest and Lugol's solution. The blood pressure was 132/100. She also had a uterine mass suspected of being an ovarian cyst. The mass reached almost to the umbilicus and at laparotomy proved to be a fibroid uterus, attached to surrounding tissues and possibly sarcomatous. The anesthetic was nitrous oxide plus oxygen plus ether. There is no anesthesia record on the chart. The patient died during the operation. The autopsy showed the thyroid to be twice the normal size and microscopically it showed hyperplasia and an adenoma. There was a persistent thymus. The aorta was half the normal size. There was atelectasis of the lower half of the left lung. The spleen was twice the normal size and microscopi-

cally showed congestion. Death was quite properly ascribed to; remote causes, uterine fibroid mass, possibly sarcoma and hyperplasia of the thyroid gland; immediate cause, anesthesia of an easily shocked patient.

The only comments that occur to me here are that this was not considered to be a toxic thyroid case. If it had been hyperthyroidism the thyroid gland should have been removed first; otherwise there would likely be a thyroid death owing to hypersecretion of adrenalin and thyroxin.

I have attempted to emphasize the manner in which an anesthetic is given rather than the agent selected. When people realize that the selection of the anesthetist is just as important as the selection of a surgeon we shall have smoother and safer anesthesia.

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### FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

#### ACUTE AMEBIC DYSENTERY

F. P. MCNAMARA, M.D., Dubuque, Iowa, and  
WILLIAM C. SCHIELE, M.D., Galena, Illinois

While amebic dysentery may assume epidemic form, as in Chicago in 1933, it is nearly always a sporadic disease in the temperate zone. Because of this fact many physicians rarely encounter it in their practice and from lack of experience with the disease may fail to suspect its presence. The Chicago epidemic demonstrated how large numbers of people may be infected at a single source. While it was expected that each of those infected might become new foci of infection, fortunately this expectation was not fulfilled. However, it must be realized that at all times there are some individuals who harbor *Endamoeba histolytica* and who under certain conditions may infect other persons. We have been unable to find the source of infection in the case to be presented but assume that it was due to contamination of the patient's food or water supply by an unrecognized carrier of the disease. Apparently the infection was overwhelming as indicated by the rapid clinical course and the extensive changes in the colon.

## CASE REPORT

*Chief Complaint:* The patient, a white man sixty-one years of age, was admitted to the Finley Hospital July 4, 1941, with a complaint of "frequent bowel movements, weakness and abdominal pain".

*Family History:* The patient's father died at eighty years of age of a cerebral hemorrhage. His mother and one sister were alive and well.

*Personal History:* The patient had always enjoyed good health except for the diseases of childhood. He had been an excessive drinker of alcoholic liquors for a number of years.

*Present Illness:* The patient had not been well for two months, and two weeks before admission he began to have fifteen to twenty bowel movements a day. This was accompanied by soreness through the abdomen and he became extremely weak.

*Physical Examination:* On examination, the only positive sign was abdominal distention and some tenderness in the right lower abdominal quadrant. The temperature was 100.4 degrees, the pulse 90 and the respirations 20 per minute.

*Laboratory Examination:* The white blood count was 9,500; all serologic tests were negative for the typhoid and dysentery groups of bacteria. Streptococci were found in smears and cultures of these feces but no amebae were found on one satisfactory examination. The feces contained a great deal of pus. The Kahn test was also negative.

*Course in Hospital:* The patient ran a temperature which occasionally rose to 102 degrees with a moderately rapid pulse. He was given sulfanilamide and sulfaguanidine and showed some improvement, but on the tenth day the abdomen became markedly distended. This was reduced somewhat by nasal suction and enemas. An x-ray examination indicated bowel obstruction probably due to paralytic ileus, and gas in the peritoneal cavity because of perforation of the intestine. The patient became more distended and died on the fourteenth day in the hospital.

*Final Clinical Diagnosis:* Dysentery with perforation of the intestine; question of typhoid or malignancy.

*Autopsy Abstract:* The body was that of an obese white man with a greatly distended and tense abdomen. On opening, a great gust of foul gas came forth and the abdominal wall collapsed. The greater omentum extended down into the pelvis and was covered by a fibrinous exudate. On lifting the omentum upward, the coils of intestine, the liver and spleen were also covered by a similar exudate. Near the cecum the exudate

was mixed with fecal material and this was found to come from a perforation in the lateral wall of the cecum. After removal, the small intestine was found lined by a smooth mucosa but the entire colon showed large and small ulcerations which tended to coalesce, exposing large areas of the muscularis (Fig. 1). Between the ulcerations, the mucosa was edematous and the edges hung over the ulcerated areas. At the cecum, in addition to the perforation, there were several other areas where the wall appeared almost ready to rupture. Except for the obesity and mild arteriosclerosis, the general examination was negative. There was no evidence of infection of the liver either grossly or microscopically. Histo-



Fig. 1. Section of the ascending colon showing ulcers of the mucosa.

logically, the ulcers of the colon were typical of those found in amebic dysentery and special stains showed many amebae in the muscular coats of the colon.

*Anatomic Diagnosis:* Primary, acute ulcerative colitis (amebic dysentery); perforation of the cecum; generalized peritonitis and pneumoperitoneum. Subsidiary: Obesity; arteriosclerosis.

*Comment:* In this case serious consideration was not given to the diagnosis of amebic dysentery because of the short, violent course of the disease. This fact emphasizes the need for constantly keeping the condition in mind and not rejecting it as a possible diagnosis without repeated examinations of the feces under proper condi-



tions and, if necessary, the utilization of stained preparations or cultures. Another feature of the case was the perforation of the bowel which is unusual in the disease, at least in the temperate zone. It was probably the result of an overwhelming infection. This is also indicated in the extensive ulcerations of the colon which, judging by the clinical history, probably occurred within a period of four weeks.

#### GENERAL DISCUSSION

During the past twenty-five years there has been a gradually increasing number of articles in the literature concerning the importance and wide distribution of amebiasis in the northern half of the United States. These articles did not receive the attention they deserved and in general the medical profession continued to consider it a tropical disease. The Chicago outbreak of 1933, in which at least 1,400 persons were infected at one source, focused attention on the disease, and today most physicians are more aware of its manifestations than ever before. However, possibly due to lingering misconceptions, but more probably because it is so rarely encountered by most physicians, it continues to be a puzzling, clinical problem. This is largely because it occurs sporadically and other etiologic factors are usually considered more likely than *Endamoeba histolytica*. As a result the search for the latter organisms is often not as intensive as necessary and therefore the diagnosis is frequently missed.

In 1932 Craig estimated that at least 1,200,000 persons harbored *Endamoeba histolytica* in the United States. Fortunately this does not signify that all have ulcerative colitis or liver abscesses which are the most distinctive lesions of the condition. Probably this is due to a natural immunity to the disease or to other unknown factors. However, the parasite does produce lesions in an unknown percentage of those infected. Furthermore, the large number of persons who harbor the parasites, represent a definite menace to the public health. It may be judged from the experience obtained in the Chicago outbreak that this menace can be largely controlled by adequate protection of water and food supplies and by sanitary sewage disposal. Even with the best of sanitation, sporadic cases will continue to occur because of the large number of infected persons each of whom may at any time transfer it to another individual who is susceptible to the disease.

While dysentery usually results from infection with the ameba, this may vary in intensity and at times is lacking. In acute amebic dysentery,

the onset is sudden with severe pain over the abdomen. They may be accompanied by nausea and vomiting and a diagnosis of acute appendicitis may be made. The diarrhea is serious and the patient may have fifteen to thirty-five bowel movements a day. The stools are fluid and contain mucus, blood and at times shreds of mucous membrane. The diarrhea may be accompanied by slight fever and the patient becomes extremely weak and depressed. After a few days or a week, the diarrhea becomes less severe and gradually subsides only to be followed by intermittent attacks from time to time. If the condition becomes chronic there are repeated attacks of colic and diarrhea with loss of appetite, and the stools show blood and mucus. Often these result in chronic invalidism with loss of weight and strength.

While the patient usually consults a physician for acute, intermittent or chronic diarrhea, in some instances constipation or vague abdominal distress and loss of weight may be the chief complaints. In such cases the etiology may be detected only upon repeated examinations of the stools with particular emphasis upon the search for the parasites. In some cases the condition may be overlooked because the physician does not suspect the possibility. It is well to remember that amebic dysentery has often been confused with bacillary dysentery, mucous colitis, ulcerative colitis, appendicitis, typhoid fever and malignancy of the colon. The diagnosis is only confirmed by demonstration of the mobile forms of the ameba in specimens of warm stools, in cultures of the stools, or by demonstrating the encysted forms in specially stained preparations. Before the diagnosis is ruled out, repeated examinations must be found negative by the above methods. A saline laxative is often desirable in order to demonstrate the organism.

The treatment consists of bed rest during the acute stages, a non-irritating diet and the administration of emetine hydrochloride, emetine bismuth iodide, chinoform or vioform in proper dosage. In chronic amebiasis, carbarsone is effective. The treatment is summarized in an excellent article by Tonney, Hoeft and Spector<sup>5</sup>, to which the reader is referred for details.

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# STATE DEPARTMENT OF HEALTH

*Nathaniel L. Biering*

## AMERICAN CONFERENCE ON INDUSTRIAL HEALTH IN SECOND ANNUAL MEETING

The Iowa State Department of Health desires to bring to the attention of physicians the following announcement of the second annual meeting of the American Conference on Industrial Health. The program last year drew a large attendance among general practitioners.

"Under the auspices of the American Association of Industrial Physicians and Surgeons, the American Conference on Industrial Health will hold its Second Annual Meeting on November 5 and 6, 1941, at Chicago Towers, Chicago, Illinois. This organization maintains a public forum for all who are interested in the prevention of disease, injury or disability and in the active supervision and promotion of health in industrial groups.

"The opening session will be a symposium on the technical problems of industrial health on the basis that health supervision in industry involves two great principles: first, the adjustment of the working environment to the employee; and second, the adjustment of the employee to the working environment, including also the human environment.

The technical problems are the result of the application of these principles, and run the whole gamut of public health as applied to industry.

"The afternoon session will be a symposium on the economics of industrial health, including: first, organization and cost of a health service; and second, discussion on the value of industrial health service to the employer, the employee and the public.

"The morning of the second day will be given over to a symposium on the social implications of industrial health, discussion to include the following: how far an industrial health service should go; hospital and medical care plans in relation to industrial health service; legislation in this problem; evaluation of labor turnover and lack of trained men; and experiences of management and interests of insurance carriers in medical and social problems.

"The sessions will close with a schedule of plant medical department inspections, by special arrangements with local industries."

SMALLPOX MORTALITY RATES IN THE UNITED STATES IN 1940

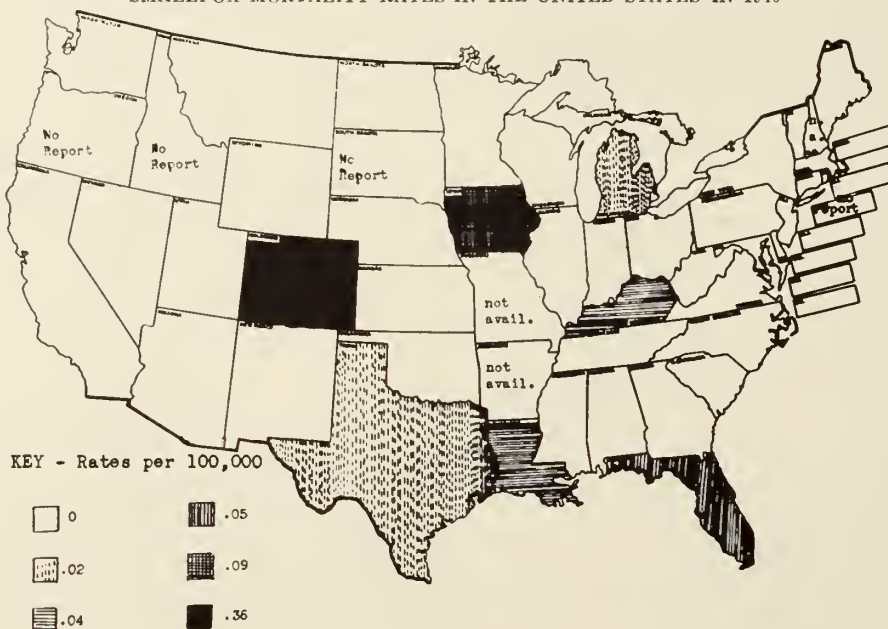


Fig. 1



## SMALLPOX AND CHICKENPOX IN THE UNITED STATES

### Mortality During 1940

The following states reported no smallpox cases or deaths in 1940: Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Rhode Island and Vermont. According to the census of 1940, these ten states have a total population of 36,486,851. Recorded deaths from chickenpox in the above listed states numbered eighteen, a mortality rate of .04 per 100,000 population.

Figures are available which show the reported incidence of smallpox and the recorded mortality from smallpox and chickenpox in twenty-eight

of the remaining states. The aggregate population in these states (1940 census) is 74,977,359. Reported cases of smallpox in the twenty-eight states totaled 1,873 in 1940; recorded deaths were ten. Deaths from chickenpox as recorded in the twenty-eight states for 1940 were 62, a mortality percentage of .08 per 100,000 population.

Figures regarding deaths from smallpox and chickenpox in the United States were assembled by Eric C. Pfeiffer, M.D., Director of the Division of Vital Statistics of the Iowa State Department of Health, through courtesy of the vital statisticians in other states. The accompanying maps (Figures 1 and 2) indicate the geographic distribution of deaths from smallpox and chickenpox in 1940, together with the mortality rates.

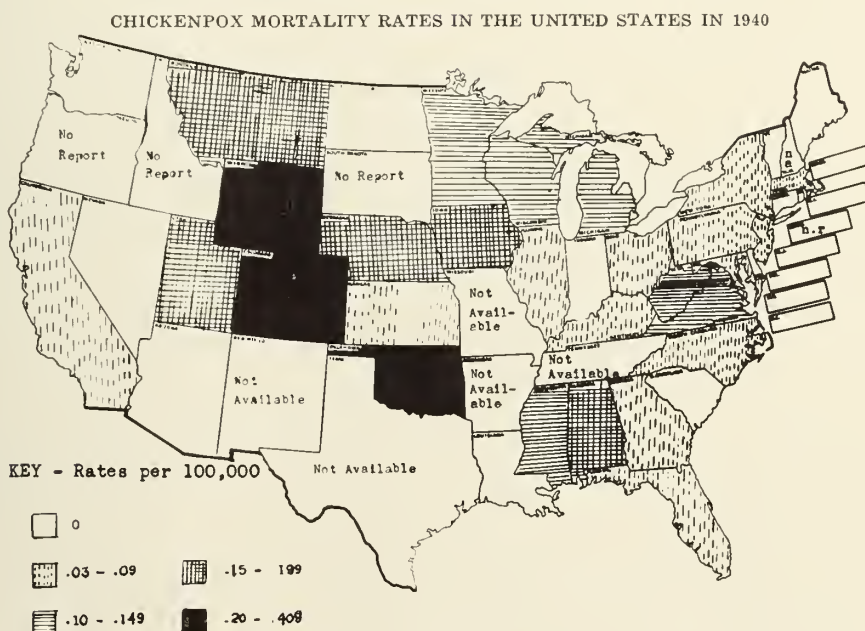


Fig. 2

### PREVALENCE OF DISEASE

Disease	Aug. '41	July '41	Aug. '40	Most Cases Reported From
Diphtheria	8	8	24	Benton, Calhoun, Cedar, Kossuth, Polk, Woodbury
Scarlet Fever	31	57	56	For the State
Typhoid Fever	15	13	16	For the State
Smallpox	2	2	3	Lee, Linn
Measles	56	225	70	Humboldt, Polk
Whooping Cough	203	199	105	Woodbury, Polk, Black Hawk, Pocahontas, Carroll, Webster
Brucellosis	27	32	26	For the State
Chickenpox	16	55	10	For the State
German Measles	4	3	1	Dubuque, Scott, Wright
Influenza	3	4	3	Clarke, Jasper
Malaria	8	10	12	Des Moines, Dubuque, Lee, Polk, Scott
Mumps	86	112	44	Marshall, Dubuque, Woodbury
Pneumonia	20	25	40	For the State
Poliomyelitis	6	10	174	Appanoose, Des Moines, Hamilton, Winnebago, Winneshek
Tuberculosis	64	35	2	For the State
Gonorrhea	129	117	150	For the State
Syphilis	188	180	204	For the State

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## PROPHYLAXIS OF THE COMMON COLD

With the advent of fall and the approach of winter there probably is not a physician in the land who is not repeatedly interrogated by laymen concerning the prophylaxis of the common cold. The widespread use of cold vaccines seems to justify an appraisal of their efficacy.

In September of 1938 Diehl, Baker and Cowan reported on a controlled study of cold vaccines among students at the University of Minnesota over a two-year period. Among the group which was given vaccine subcutaneously there was a reduction of 73 per cent in the number of colds as compared with the previous year. However, in the control group which received no vaccine there was a reduction of 63 per cent in the number of colds as compared with the previous year. The group which received the vaccine experienced an average of 25 per cent less colds per person than did the control group which was given hypodermic injections of normal saline, but according to the authors this difference has little practical significance. The group which received the polyvalent vaccine administered orally had just as many colds as the control group. In August, 1940, the same authors reported on a further evaluation of cold vaccine. Vaccine prepared by the Kreuger method was employed in the first research, while the traditional heat-killed vaccine was used in the second study. According to these authors controlled studies revealed no evidence that it was of value.

In a controlled study by Hauser and Hauser at the University of Michigan, 200 students were given polyvalent vaccine subcutaneously, 100 students were given the vaccine intradermally, and 100 students were given placebos. Over 66 per

cent of subjects who received placebos had fewer colds than during the preceding year. Over 64 per cent who were given the vaccine intradermally considered themselves improved. Of those who were given the vaccine subcutaneously, 80 per cent reported that they had fewer colds than during the preceding year. The authors stated that the percentage of difference between the three groups is within the limits of error. Blitch and Doyle concluded from a controlled study that cold vaccine given to a group of soldiers living under comparable conditions, did not prevent colds or their complications, nor did it reduce the severity or the duration of the illness to any appreciable extent.

Concerning the use of oral vaccine, Forgrave and Forgrave in a controlled study of 40 industrial workers, reported a 70 per cent decrease in the number of common colds. The authors considered it an inexpensive and effective step toward the solution of a serious industrial health problem. A similar study by Murat was carried out over a two-year period and involved a total of 1,273 individuals. There was a loss of time in 6.3 per cent of those taking the vaccine as against 8.6 per cent of those taking a placebo. It was concluded that a certain degree of protection may be afforded by the oral administration of vaccine.

Stanley in a controlled study among prisoners presented data which demonstrated no benefits in those subjects given the oral or subcutaneous vaccine as compared with those prisoners who were given placebos. Stafford reported another controlled study on a group of 338 university students in which it was found that a period of protection occurred during which the number of severe colds and total days' illness from severe colds in the oral vaccine group was only one-fifth that of the controls. Walsh recommends the use of a mixed vaccine in normal saline as a nasal spray on the hypothesis that it induces a local tissue immunity. Of a total of 627 patient-years of vaccination there were 74 per cent good results, ten per cent fair results and sixteen per cent failures. It is the author's conclusion that the method of local vaccination offers the best means of prophylaxis at our disposal.

From the available studies it seems apparent that the results from the use of subcutaneous or oral vaccine in the prophylaxis of the common cold are equivocal. Equally well controlled studies record contradictory results. Certainly there is nothing to justify enthusiasm over the efficacy of the various measures, and it is questionable if one can conscientiously recommend them to accomplish the purpose for which they are under-



taken. Further studies on the use of the vaccine as a nasal spray are necessary before any decision as to its value can be made.

#### THE MENTALLY UNSUITABLE SELECTEE

At the present time three-fifths of the beds in the seventy-nine Veterans Hospitals are occupied by some 33,000 neuropsychiatric patients. Each year 4,800 more patients of this class are expected. Since 1923 one billion dollars have been expended for the compensation and hospital care of neuropsychiatric cases. In the fiscal year ending June 30, 1940, nearly twenty-two years after the armistice, the government expended in compensation for neuropsychiatric cases \$41,889,360.00 to 68,727 men, 35,846 of whom are diagnosed as being "psychoneurotics" or "neurotics". It has been calculated that each individual neuropsychiatric casualty of World War I has cost the taxpayers about \$35,000.00. Judging by the experience of the last war every three potential neuropsychiatric casualties who are detected and rejected will save the country \$100,000 over the next twenty years.

However, it is not for dollars and cents alone that mentally ill or maladjusted men should be detected and rejected as vocationally unsuitable for army service. The registrant who is mentally or emotionally unsuitable is perhaps a greater liability in the army than is the registrant who is physically unqualified. The man who reacts with neuroses or psychoses to the stress of army training or actual warfare, who is a misfit and a troublemaker under the discipline and hardships of army life, disrupts morale and is a total waste to the fighting force. Nor is it only for the taxpayer or the fighting force that it is imperative for those with unstable personalities to be detected and rejected. The anguish and suffering of these men as individuals, the tragic significance to their families and the years of hopeless dependence cry out against a repetition of the mistakes of World War I.

The responsibility for the detection of existing, manifest neurologic or psychiatric pathology rests with the local board examiners and the medical advisory board. Medical Circular No. 1 of the Selective Service System lists the diagnostic groups to be employed.\* Registrants who fall in any one of the following groups are to be rejected:

- I. Mental defects or deficiencies.
- II. Psychopathic personalities.
- III. Manic-depressive personalities, especially those with a history of hospitalization.

IV. Psychoneuroses.

V. Schizophrenics, including pre- and post-schizophrenic states and all paranoid personalities.

VI. Chronic alcoholic or other drug addicts.

VII. Syphilis of the central nervous system.

VIII. Organic disease of the brain, spinal cord or peripheral nerves, including the epilepsies.

Psychiatrists attached to army induction boards are expected to eliminate those men with personality disorders missed by the previous examiners, and to reject those men whose personality make-up suggests that they may break under the stress of army life. It is within the province of this officer to accept only those men who are vocationally suitable to army life, rejecting those who are better suited to civilian occupations than to the army.

It must be remembered that the examiners who constitute the local draft boards work without remuneration; the examinations are usually done with haste and frequently in large numbers. The members of the draft boards are general practitioners without special psychiatric training, and a psychiatric consultant is not always available. It is probable that many registrants who are mentally and emotionally unfit may be accepted. Therefore, it would seem imperative that one examiner of every local draft board thoroughly familiarize himself with the various neuropsychiatric states and their recognition, and that the screening of these individuals evolve upon the one examiner.

The September, 1941, *Bulletin of the Menninger Clinic* is a military psychiatric number composed of seminars by members of the staff. It presents in a clear and brief manner the essential information for the recognition of the various personality disorders. This volume should be in the hands of every draft board in the land.

#### NARCOTIC ACT AMENDED

The Forty-ninth General Assembly of the Iowa State Legislature amended the Uniform Narcotic Act. The amendment became effective July 1, 1941. Copies of the amended act have been mailed to the physicians of the state, but there appears to be considerable confusion about the act and a lack of familiarity with its content.

The amendment which became effective July 1 removes all narcotic preparations from the exempted list, except those containing not more than one grain of codeine per ounce. All other narcotic preparations can only be dispensed or sold on a bona fide prescription. Whoever dispenses

\*Jour. Am. Med. Assn., cxvi:2059-2061 (May 3) 1941.

or sells the exempt narcotic preparations must keep a record of sale. This record requires the date of sale or dispensing, the name and address of the person to whom it was sold or dispensed, and the kind and the quantity of drugs. Every record must be kept for a period of two years from the date of the transaction.

To purchase this class of exempt preparations from the manufacturer or wholesaler the physician must present a special Iowa order form which may be obtained from the State Pharmacy Department at a cost of ten cents for five order blanks. These blanks are in triplicate; the original is presented to the jobber or manufacturer; the duplicate must be mailed to the Pharmacy Department, and the triplicate is to be retained by the purchaser.

The act also provides that any individual who unlawfully enters a doctor's office, home or car to obtain narcotic preparations is guilty of a felony, punishable by imprisonment not to exceed five years or a fine not to exceed one thousand dollars. Likewise, any automobile employed to conceal or carry in violation of the act shall be forfeited to the state of Iowa.

The intent of the amendment to the Uniform Narcotic Act is to provide more protection to those engaged in the legitimate administering and dispensing of narcotics. As such we are sure it will receive the wholehearted support of ethical practitioners in the state.

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## THE ART OF THE PRACTICE OF MEDICINE

The difference between the science and the art of medicine is perhaps most clearly shown in the management of the patient with heart disease. Whereas one man may recognize organic heart disease and relegate his patient to invalidism and a mental state of constant fear of impending disaster, another physician, in the management of a similar condition, may be able to instill in his patient a philosophy of moderation and an opportunity to lead a happy and useful life although he is physically handicapped.

Bishop and Bennett in a recent issue of *Hygeia* state, "The outlook for longevity in heart disease is not at all gloomy when viewed from the range of cases followed over the years in a private practice in cardiology. \* \* \* A happy life of three score years and ten—and then some—can be attained if the days of such cardiac 'risks' are marked by moderation".

As one looks back through the years it is with

considerable chagrin that one recalls the bad prognosis given in a case of rheumatic heart disease or of hypertension, and today confronts those patients on the street, enjoying useful lives and affording happiness to everyone about them. Physical signs are not infallible; judgment is difficult.

As physicians we are too prone to lose sight of the fact that we are treating human beings, beings with minds and emotions, and not mere organisms with hearts and lungs and kidneys. To provide rest and digitalis is not enough; we must offer hope and project to the patient a way of living that is in keeping not only with his physical handicap, but one that is conducive to tranquility of mind and to the usefulness of life.

The recording of the blood pressure does not help the patient with hypertension. Hypertension does not preclude longevity. Fear and excess jeopardize the life of the patient with an elevated pressure; serenity and moderation give promise of continued usefulness and happiness. The successful management of the ill patient demands something more than the treatment of his pathologic state. The art of medicine is the treatment of the individual as a whole.

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## MEDICAL PREPAREDNESS\*

In addition to the work they are already doing for medical preparedness, the county medical societies are now being asked to organize for civilian medical defense in emergencies. Medical societies in industrial centers along the coast and the Great Lakes have already completed such organizations and are prepared to give medical service should any disaster befall their community.

Although it seems improbable that such an emergency will arise in Iowa, the fact remains that more and more defense work is being undertaken, more people are being massed in certain areas, and the possibility does exist. Therefore, your Committee on Medical Preparedness has asked the county medical societies to coordinate all facilities touching on medical service. Representatives of the public health agencies, hospitals, nursing and medical professions should be included in any organization and a local Chief of Emergency Medical Services should be appointed. Full details of the desired procedure have been sent to all county societies, and your Committee asks prompt consideration of the matter.

\*From the Committee on Medical Preparedness.



# SPEAKERS BUREAU ACTIVITIES

## FALL COURSES

In view of the fact that the postgraduate medical lectures are widely scattered throughout the state, it is hoped that many Iowa physicians will take advantage of this opportunity and attend the lectures held in their respective vicinities. Each meeting is open to all physicians, nurses and assistants. Enrollment reports for the courses which opened in September have been exceptionally good, but new registrations are anticipated during October. At Grinnell where four weekly lectures will be held during the month, it is felt there will be an unusually large attendance due to the fact that Jasper County physicians plan to attend these lectures, and in November the Jasper County Society will hold four weekly lectures in Newton, at which the Poweshiek County physicians will be present. This reciprocity

should enlarge the enrollment at both centers and add greatly to the success of each course.

## RADIO SCHEDULE

WOI—Wednesdays at 2:05 p. m.

WSUI—Fridays at 9:15 a. m.

Oct. 1- 3	Vision	Cecil C. Jones, M.D.
Oct. 8-10	Anesthesia	John Connell, M.D.
Oct. 15-17	Early Symptoms of Cancer	Roy C. Gutch, M.D.
Oct. 22-24	First Aid Treatment of Wounds	Julian M. Bruner, M.D.
Oct. 29-31	Believe It or Not	Harold E. Farnsworth, M.D.

## POSTGRADUATE MEDICAL LECTURES FOR THE MONTH OF OCTOBER

Carroll St. Anthony Hospital 6:30 p. m.	October 2	Common Diseases of the Skin James H. Mitchell, M.D., Chicago
Davenport Lend-a-Hand Club 6:00 p. m.	October 7	Pain Relief in Labor Management of Some Common Complications of Pregnancy John W. Harris, M.D., Madison
Ottumwa Hotel Ottumwa 6:30 p. m.	October 7	Vitamin Deficiency—Symptoms and Treatment Clifford J. Barborka, M.D., Chicago
Marshalltown Hotel Tallcorn 6:00 p. m.	October 7	Cancer A. C. Broders, M.D., Rochester
Grinnell Hotel Monroe 6:30 p. m.	October 7	Urologic Diseases A. G. Fleischman, M.D., Des Moines
Red Oak Hotel Johnson 6:30 p. m.	October 14	Treatment of Pneumonia Willis M. Fowler, M.D., Iowa City
Grinnell Hotel Monroe 6:30 p. m.	October 14	Common Obstetric Abnormalities and Their Treatment Everett D. Plass, M.D., Iowa City
Jefferson Greene County Hospital 6:30 p. m.	October 16	Gynecology in Office Practice John H. Randall, M.D., Iowa City
Ottumwa Hotel Ottumwa 6:30 p. m.	October 21	Treatment of Fractures of the Upper Extremity Lewis M. Overton, M.D., Des Moines
Grinnell Hotel Monroe 6:30 p. m.	October 21	Management of Fractures of the Lower Extremity Verl A. Ruth, M.D., Des Moines
Spirit Lake Antlers Hotel 6:30 p. m.	October 21	Common Diseases of the Skin and Their Treatment Wendell M. Willett, M.D., Des Moines
Davenport Lend-a-Hand Club 6:00 p. m.	October 23	The Indications for and Results of Operations on the Sympathetic Nervous System The Diagnosis and Treatment of Diseases of the Cranial Nerves Max M. Peet, M.D., Ann Arbor
Artes Sheldon-Munn Hotel 6:30 p. m.	October 23	The Significance of Hypertension in Pregnancy Everett D. Plass, M.D., Iowa City
Red Oak Hotel Johnson 6:30 p. m.	October 28	Common Obstetric Abnormalities Robert M. Collins, M.D., Council Bluffs
Grinnell Hotel Monroe 6:30 p. m.	October 28	Upper Respiratory Infections in Children James E. Dyson, M.D., Des Moines
Carroll St. Anthony Hospital 6:30 p. m.	October 30	Urology in General Practice Gershom J. Thompson, M.D., Rochester

# WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*

5822 North Waterbury Road, Des Moines

*President*—MRS. W. R. HORNADAY, Des Moines

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*Secretary*—MRS. M. J. MOES, Dubuque

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## SUGGESTED PROGRAM FOR 1941-1942

For the year 1941-1942 the Program Committee of the Woman's Auxiliary to the Iowa State Medical Society presents the subject "The Doctor's Wife and Defense," for consideration in our study groups. This theme was suggested by the National Program Committee for State Auxiliaries. It is the hope of the committee that the following outline may be of help to all who may wish to study this subject which is of such vital importance in this time of emergency.

### OBJECTIVES

May this study mean not only self-education but, through our contact with lay groups, an ever-expanding educational process for the maintenance of health in our state and nation. The objectives are a proper understanding of:

1. The food values necessary to health.
2. The foods that build and repair the body, meet energy requirements, regulate body processes, promote growth and protect against disease.
3. The digestive processes as related to health.
4. The importance of personal health for efficient effort.
5. The correct preservation and preparation of food.
6. The planning of balanced menus for the family.
7. The wise use of the dollar in the purchase of food.
8. The preventive and curative use of foods which enable us to cooperate with the physician.

### OUTLINE

- I. The buying of foods, considering quality and cost.
  - A. Perishable foods—meats, milk and milk products, vegetables and fruits.
  - B. Canned goods—comparative quantity and quality.
- II. The protective foods.
  - A. Milk products
  - B. Whole grain cereals
  - C. Leafy vegetables
  - D. Citrous fruits.
- III. Preparation of foods.
  - A. Protein cookery—milk, eggs and meat
  - B. Vegetable and fruit cookery to preserve color, flavor, minerals and vitamins.

## IV. The fortifying of our staple foods.

- A. Bread and cereals
- B. Milk and milk products
- C. Cod liver oil
- D. Oleomargarine.

## V. Food fads and fallacies.

## VI. Feeding the various age levels.

- A. The child
- B. The adolescent
- C. The middle-aged.
- D. The aged.

## VII. Food as preventive medicine.

- A. Goiter.
- B. Rickets
- C. Pellagra
- D. Beri-beri.

## VIII. Food in curative medicine.

- A. Anemia
- B. Diabetes
- C. Arthritis
- D. Nephritis.

## IX. Miscellaneous topics for presentation or review.

"What the People of Iowa Eat," by J. Fred Clarke, M.D., Iowa State Medical Library.

"Eight Ways to Insure Better Diets," by Harriet Elliott, in *For Women and Defense*.

### REFERENCES

The following references are to be found in the Iowa State Medical Library in Des Moines:

"Estimation of Nutritional State in Children", *New England Journal of Medicine*, February, 1940.

"The Diet of Adolescent Girls", *Journal of Pediatrics*, January, 1940.

"Ten Good Eaters and Ten Poor Eaters", *Journal of Pediatrics*, August, 1940.

"Food and the Housewife", *British Medical Journal*, July, 1940.

"Menus, Diets and Nutrition," *Nebraska State Medical Journal*, June, 1940.

"Observations on the Nutritive Value of Bread", *Canadian Public Health Journal*, September, 1940.

"Our Daily Bread", *The Irish Journal of Medical Science*, February, 1941.

"Nutrition and National Defense", Morris L. Drizin, M.D., *Military Surgeon*, January, 1941.



"Nation's Larder in War-time" and "Nutritionally Improved and Enriched Flour and Bread", Journal of the American Medical Association, June 28, 1941.

The following books may be found in public libraries:

"Consumer Foods", by Edward Reich and Carlton Seigler.

"Foods and Nutrition", by Fern Silver.

"Consumer Economics", by Kennedy and Vaughn.

"Nutrition and Physical Fitness", by Jean Bogert.

"The Foundations of Nutrition", by Mary Swartz Rose.

"Food Nutrition and Health", by McCollum and Becker.

"Shattering Food Superstitions", by Morris Fishbein.

"Your Diet and Your Health", by Morris Fishbein.

"Vital Vegetables", by Ida Bailey Allen.

"The Balanced Diet", by Clendening, and "Dietetics Simplified", by Bogert and Porter may be secured from the Iowa State Traveling Library.

Magazines and pamphlets which will be found valuable in the study of this subject are:

*Consumer's Guide*, (Published biweekly, Fifty cents per year. Address Superintendent of Documents, Government Printing Office, Washington, D. C.)

*What's New in Home Economics*, No. 5, 1941—Teaching meat selection and cookery.

*Reader's Digest*, January, 1941. "Supercharged Flour—An Epochal Advance", by Paul De Kruif.

*Scientific Monthly*, October, 1939. "The Influence of Nutrition on Disease of Middle and Old Age", by Dr. Victor G. Heiser.

*Harper's Magazine*, 1941, pp. 375-385—"Total Defense and Public Health", by J. Roty.

*Hygeia*, July, 1941. "Stretching the Food Dollar", by Martha C. Howard.

Catalog of pamphlets and loan materials from the Department of Health Education of the American Medical Association, Chicago, Illinois.

Health Materials from the Iowa State Department of Health, Des Moines.

Home Economics Extension Service, Iowa State College, Ames, Iowa.

Some features of the News Page will be articles prepared by our Program Committee on the following topics: Importance of Child Nutrition, by Mrs. James Dyson of Des Moines; Hospitalization Insurance, by Mrs. Ernest E. Shaw of Indianola; Mental Health and Defense, by Mrs. Henry G. Decker of Des Moines; Who's Who in the Field of Nutrition, by Mrs. Lee E. Rosebrook of Ames; and Health-grams by Mrs. Allan G. Felter of Van Meter. Mrs. Keith M. Chapler of Dexter will again contribute her splendid book reviews.

The above program is respectfully submitted with an earnest desire that it may play an important part in making the doctor's wife a dynamic force in our great defense program.

Mrs. Allan G. Felter  
Chairman, Program Committee

## IOWA NUTRITION CONFERENCE

The Iowa Nutrition Conference was held Monday, September 15, in Ames, Iowa. It was a most inspirational meeting in which the nutritional picture in our state was presented and plans made to improve certain undesirable conditions. Each county chose a temporary chairman and co-chairman who were to carry the work into the home areas. When these representatives call meetings in your counties will you attend and be of service whenever it is possible? These are some of the steps which you as an Auxiliary may take even before such a meeting is held. These will give you a splendid foundation for the program which we have set up for you. Secure facts concerning the nutritional needs and resources in your county, including

- A. Extent of malnutrition in your county.
- B. Food habits.
- C. Home production and conservation of food.
- D. Existing organizations and agencies having nutrition programs. (By programs we mean not only a talk on this subject but a plan to study nutrition in your vicinity.)

In carrying on this program we must work with other organizations such as schools, churches, farm bureaus, chambers of commerce, women's clubs, men's service clubs, medical and nursing groups. Each will have an opportunity to help.

This is just the beginning of a nutrition program which we hope will promote health, strength, efficiency and happiness for many years to come. Each month we will have new suggestions for you and we hope you enjoy working as much as we enjoy planning.

Mrs. W. R. Hornaday,  
President, State Auxiliary.

## EXHIBIT AT THE FAIR

As mentioned in the last News Page your Auxiliary had a place in the Iowa State Department of Health Exhibit during Fair week. The real purpose was to meet Iowa people, and to find out just what type of health education most interested them. We also talked with them about their health programs, who sponsored them and whether or not they were well attended. If interested we issued blanks which would help them secure a speaker from the Iowa State Medical Society Speakers Bureau sometime during the coming year. High school superintendents, teachers and students were interested in our Health Essay Contest and gave us their names so that we could send necessary material later. *Hygeia* copies were ever present on our table and were given to interested persons with subscription blanks for future use. An interested caller at our exhibit was the young man who posed for the picture on the August, 1941, *Hygeia* cover. Five hundred copies of "A Guide to Good Eating" were passed out during the week.

The following table is a picture of the growth of Auxiliary since 1934. *Study it.* If your county has dropped, we will be very glad to help you reorganize it. If your membership has dwindled try to make it 100 per cent by the end of the year.

sons who are chronic sufferers from sinus infections and colds. This book is a timely angle on an old subject.

*Feeding Our Old Fashioned Children*, by C. A. Aldrich, M.D., and M. M. Aldrich is the answer on

	1934-1935	1935-1936	1936-1937	1937-1938	1938-1939	1939-1940	1940-1941
Adair County.....	.....	.....	.....	.....	.....	.....	4
Calhoun.....	.....	.....	.....	12	12	20	15
Cass.....	.....	10	9	11	11	12	13
Cerro Gordo.....	18	20	12	14	10	.....	.....
Dallas-Guthrie.....	16	19	20	22	29	29	36
Dubuque.....	.....	.....	32	29	20	17	28
Greene.....	.....	.....	.....	.....	.....	.....	15
Hardin.....	.....	.....	.....	.....	.....	.....	4
Jackson.....	.....	.....	11	12	14	14	13
Louisa.....	11	.....	10	8	7	7	7
Madison.....	.....	.....	.....	12	10	9	8
Marion.....	.....	18	9	18	14	.....	.....
Mills.....	10	8	8	10	9	6	6
Monroe.....	6	6	6	6	9	9	7
Montgomery.....	.....	.....	10	14	15	14	14
Muscatine.....	20	20	18	20	19	17	18
North West Unit.....	.....	.....	21	23	14	9	4
Polk.....	49	57	86	97	114	92	163
Pottawattamie.....	.....	35	41	42	40	32	33
Upper Des Moines.....	.....	.....	.....	.....	.....	.....	8
Washington.....	5	14	18	9	.....	10	10
Wapello.....	19	33	33	.....	.....	.....	.....
Wayne.....	.....	11	9	.....	.....	.....	.....
Webster.....	28	.....	28	29	.....	.....	.....
Woodbury.....	45	48	47	40	44	42	50
At Large.....	4	5	8	7	7	9	8
Totals.....	232	304	436	435	396	348	464

#### FROM THE PUBLIC RELATIONS COMMITTEE

Do YOU know the best way to administer aid before the doctor comes?

Your Public Relations Committee thinks *every Auxiliary member ought to know.* If you don't know, join a Red Cross First Aid Course. Have your local Auxiliary join as a group if you can.

Anna T. A. Glomset, Chairman  
Public Relations Committee

#### BOOK NOTES

Since life would be an impossibility without food, it is only sensible to make a study of foods, their chemistry and nutritional values. *Chemistry of Food and Nutrition*, by H. C. Sherman of Columbia University, is actually a textbook in its sixth edition. However, it is among the best source books available, and should one not care to read it through, it is invaluable as a reference book in the home library. Dietary standards, chemical aspects in regard to growth, food economics, vitamins, and every other phase of practical interest make this book a very worthwhile volume with which to be familiar.

Fall is right at our doorstep and those who battle against colds and sinus difficulties during winter weather will welcome *Diet in Sinus Infections and Colds*, by E. V. Ullmann, M.D. There are foods which can help an individual to build up resistance to colds. There is a definite vitamin lack in per-

how to feed our children. The emphasis is laid upon the thought that individual feeding mechanisms need to be understood and developed. *Babies Are Human Beings*, by the same authors, won the 1939 Parents' Magazine award for the best parents' book of the year, and this new work is a companion volume to the prize book.

As long as we are discussing foods, here is a note on drinking. *What Price Alcohol*, by R. S. Carroll, M.D., is the author's opinion for today's increased alcoholism with suggestions for rehabilitation. Dr. Carroll has gained extensive clinical experience as medical director at Highland Hospital, Asheville, North Carolina.

Mrs. Keith M. Chapler

#### SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:05 p. m.

WSUI—Fridays at 9:15 a. m.

Oct. 1-3 Vision

Cecil C. Jones, M.D.

Oct. 8-10 Anesthesia

John Connell, M.D.

Oct. 15-17 Early Symptoms of Cancer

Roy C. Gutch, M.D.

Oct. 22-24 First Aid Treatment of Wounds

Julian M. Bruner, M.D.

Oct. 29-31 Believe It or Not

Harold E. Farnsworth, M.D.



## SOCIETY PROCEEDINGS

### Bremer County

The combined monthly meeting of the Bremer County Medical Society and the staff of St. Joseph's Mercy Hospital was held at the hospital in Waverly, Monday, September 22. The scientific program was a recording of *The Making of a Diagnosis*, by David P. Barr, M.D., professor of medicine, St. Louis University School of Medicine, St. Louis, Missouri.

O. S. Blum, M.D., Secretary

### Buchanan County

Joseph C. Ohlmacher, M.D., formerly of Independence, addressed the Buchanan County Medical Society at a six-thirty dinner meeting held at the Hotel Gedney in Independence, Thursday, September 18. Dr. Ohlmacher, who is now dean and professor of pathology and bacteriology at the University of South Dakota School of Medical Sciences, Vermillion, spoke on *What Present Day Physicians Should Know About Tumors of the Female Breast*.

### Calhoun County

The Calhoun County Medical Society met in Rockwell City, Tuesday, September 16. The program consisted of a recording of *The Diagnosis of Poliomyelitis*, by John A. Toomey, M.D., associate professor of pediatrics, Western Reserve School of Medicine, Cleveland.

### Greene County

The next regular monthly meeting of the Greene County Medical Society will be held at the hospital in Jefferson, Thursday, October 9. Walter D. Abbott, M.D., of Des Moines, will present an illustrated lecture on *The Management of Head Injuries*.

J. R. Black, M.D., Secretary

### Linn County

Chronic Rheumatism was the subject discussed for members of the Linn County Medical Society in regular session Friday, September 12 at the Hotel Roosevelt in Cedar Rapids. Guest speaker was Ralph A. Kinsella, M.D., professor of medicine, St. Louis University School of Medicine. Discussion was opened by Fred M. Smith, M.D., of Iowa City, and Ben F. Wolverton, M.D., of Cedar Rapids.

### Madison County

The Madison County Medical Society held its first meeting of the fall at the Community Hospital in Winterset, Monday, September 15. William R. Hornaday, M.D., of Des Moines, spoke on *The Irritable Bladder in the Female*.

Evelyn M. Olson, M.D., Secretary

### Marion County

Walter D. Abbott, M.D., of Des Moines, furnished the scientific program for the Marion County Medical Society meeting held in Pella, Wednesday, September 17. Dr. Abbott presented an illustrated lecture on *Encephalitis*.

### Polk County

The Des Moines Academy of Medicine and Polk County Medical Society opened its fall season Wednesday, September 17, at Younkers Tea Room in Des Moines, with two guest speakers from the University of Minnesota Postgraduate Medical School. Fred Z. Havens, M.D., associate professor of otolaryngology and rhinology, discussed *Plastic Surgery*, and Bayard T. Horton, M.D., associate professor of medicine, spoke on *The Treatment of Headache*.

The next meeting of the organization will be Wednesday, October 15, at Younkers Tea Room, at 6:00 p. m. Henry G. Decker, M.D., will discuss *Subarachnoid Hemorrhage*, and Howard D. Gray, M.D., will speak on *The Significance of Uterine Hemorrhage*. Following the seven o'clock dinner, John T. Strawn, M.D., will present a paper on *Gastric Hemorrhage*, and John C. Parsons, M.D., will address the group on *Pulmonary Hemorrhage*. All essayists are of Des Moines.

Additional programs by outstanding guest speakers are scheduled as follows: November 12, 1941, William Parry Murphy, M.D., of Boston, on *The Treatment of Anemia*; February 18, 1942, Frank C. Mann, M.D., of Rochester, on *The Physiology of the Liver*, and Albert M. Snell, M.D., of Rochester, on *Recent Advances in the Study of Cholecystic and Hepatic Diseases*; and March 18, E. T. Bell, M.D., of Minneapolis, on *Kidney Disease*, and C. Anderson Aldrich, M.D., of Chicago, on *Treatment of Chronic Nephritis and Nephrosis*. In addition to these postgraduate lectures, the society will present programs by local physicians on December 17, 1941 and May 20, 1942.

### Scott County

Carl V. Moore, M.D., assistant professor of medicine at Washington University School of Medicine, St. Louis, was the speaker of the evening when members of the Scott County Medical Society convened for their first scientific session of the 1941-1942 season. Dr. Moore addressed the society at the Lend-a-Hand Club in Davenport, Tuesday, September 2, on *Differential Diagnosis and Therapy of the Leukemias*.

The second meeting was held Thursday, September 18, with Elmer L. Sevringhaus, M.D., professor of medicine, University of Wisconsin Medical School,

Madison, speaking on Pituitary Disorders and Their Endocrine Treatment. The next meeting will be held Tuesday, October 7, at which time the society will entertain John W. Harris, M.D., professor of obstetrics and gynecology, University of Wisconsin Medical School, Madison. Dr. Harris will speak on Pain Relief in Labor, and The Management of Some Common Complications of Pregnancy.

#### Wapello County

The Wapello County Medical Society initiated a series of postgraduate lectures Tuesday, September 9, when Harvey S. Allen, M.D., of Chicago, spoke in Ottumwa on the subject of The Immediate Treatment of Burns. Geza de Takats, M.D., associate professor of surgery, University of Illinois, College of Medicine, Chicago, addressed the group on Peripheral Vascular Disease in General Practice, Tuesday, September 23.

#### Warren County

Thursday, September 18, the Warren County Medical Society held its annual invitation meeting at Lake Ahquabi. Guest speakers of the occasion were W. D. Paul, M.D., of Iowa City, on The Use of the Gastroscope in the Diagnosis of Gastric Lesions, and H. M. Korns, M.D., of Iowa City, on The Medical Treatment of Peptic Ulcer.

#### MARRIAGES

The marriage of Miss Eloise Taylor of Iowa City, and Dr. Lewis E. January, also of Iowa City, took place September 13 at the First Presbyterian Church in Iowa City. After a short honeymoon the young couple will be at home in Iowa City, where Dr. January is a resident physician in the medical department of the University Hospitals.

Miss Adella Gordon Badgerow of Daytona Beach, Florida, and Dr. James E. Reeder, Jr., of Sioux City, were married July 30 at the home of the bride in Florida. They will live in Sioux City, where Dr. Reeder is associated with his father in the practice of medicine.

The marriage of Miss Lillian Ila Draper of Iowa City, and Dr. Marcus B. Emmons of Iowa City, took place August 26 at the home of the bride's parents in Eldora. After a northern trip they will live in Iowa City, where Mrs. Emmons is supervisor of the admitting department, University Hospitals, and Dr. Emmons is an instructor in the psychiatric department.

Vera Sulek of Iowa City became the bride of Dr. John H. Ganschow, also of Iowa City, at a ceremony held in St. Mary's Rectory in Iowa City. They will live in Burlington, where Dr. Ganschow had ac-

cepted a position in the emergency hospital at the ordinance plant.

The marriage of Miss Wanda Sharts of Libertyville, and Dr. Frank Rizzo of Oelwein, took place July 24 in Trenton, Missouri. The couple is living in Des Moines, and Dr. Rizzo is connected with the ordinance plant near Ankeny.

#### DEATH NOTICES

**Brown, Joseph**, formerly of Des Moines, aged fifty-five, died September 5 at his home in Hollywood, California, after a long illness. He was graduated in 1910 from Baltimore Medical College, and had long been a member of the Polk County Medical Society.

**Henneger, William Andrew**, of Dubuque, aged fifty-four, died September 12 after an illness of ten months. He was graduated in 1908 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Dubuque County Medical Society.

**Meythaler, Arthur J.**, of Earlville, aged sixty-four, died suddenly August 29 after a heart attack. He was graduated in 1902 from St. Louis University School of Medicine and had been a member of the Delaware County Medical Society.

**Norton, William Sheffield**, of Muscatine, aged seventy-four, died suddenly September 13 of a heart attack. He was graduated in 1900 from the Kansas Medical College, Topeka, and had long been a member of the Muscatine County Medical Society.

**Rice, Rose Hammond**, of Council Bluffs, aged seventy-four, died August 22 of a heart attack. She was graduated in 1903 from the University of Nebraska, College of Medicine, Omaha, and had long been a member of the Pottawattamie County Medical Society.

**Ryan, George Chester**, of Maquoketa, aged forty-six, died September 2 at The Mayo Clinic in Rochester, Minnesota, following a short illness. He was graduated in 1920 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Jackson County Medical Society.

**Walter, Augustus F.**, of Gladbrook, aged eighty-four, died August 23. He had been in ill health for two years. He was graduated in 1882 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Tama County Medical Society.



# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. TOM B. THROCKMORTON, Des Moines

DR. JOHN T. MCCLINTOCK, Iowa City

DR. WALTER L. BIERRING, Des Moines

DR. R. T. LENAGHAN, Clinton

DR. HENRY G. LANGWORTHY, Dubuque

## The Medical History of Palo Alto County

*Prepared by*

CLARA ANTOINETTE RASMUSSEN, B.A.

Ruthven, Iowa

(Continued from last month)

Throughout his professional career, Dr. Huston has been affiliated with the county, state and national medical societies. Several fraternal and civic organizations claim him as an active member. He is president of the Central Savings Bank and Trust Company of Emmetsburg and of the Ruthven Telephone Company.

With diversified interests, Dr. Huston has been able to find relaxation from an arduous practice. In the early days he participated in several mid-west tennis tournaments, became a good baseball player and played in various bands. He holds the distinction of being the first person in northwestern Iowa to own and operate an automobile. It is interesting to hear him relate the experiences he had with it. In later life he developed such hobbies as tree-planting and agriculture.

A devotee of the arts during his entire life, Dr. Huston derives much inspiration from music and literature which have been produced by the genius of the world. One has often heard the doctor play his favorite classical selections on his grand piano. In addition he shows an avidity for knowledge gained from wide readings relative to history, the science of government and the current problems of our state and nation.

Such has been the full life and most interesting experiences of our senior physician. As J. P. Warbasse has said, "The physician who gets the most from his experience develops a philosophy of life—an art of living and expands his character with the passing of the years."

Two prominent physicians, Dr. Edward D. Beatty and Dr. George H. Keeney of Mallard hold the honor and distinction of having been associated together in the practice of medicine for a longer period of time than any other medical partnership in the history of Palo Alto county. They have

practiced together at Mallard for more than thirty years. The senior physician, Dr. Beatty, came to Mallard with Dr. J. W. Woodbridge of Emmetsburg in July of 1895. The former decided to remain at Mallard while the latter proceeded to Cylinder where he began his practice.



DR. E. D. BEATTY  
Mallard, Iowa  
1871—

Dr. Edward D. Beatty was born at South March, Ontario, Canada, July 17, 1871. He was the son of John and Sarah Phelan Beatty, the second child of a family of four children. His father was a farmer and railroad contractor. Young Edward received his early education in Ottawa, Canada. Later he attended the Medical College at the McGill University at Montreal



where he was graduated with the class of 1895. Dr. Beatty took postgraduate work in surgery at Chicago Polyclinic Hospital in 1898 and again in 1905 and in 1911 he took additional postgraduate work in New York.

Locating at Mallard in 1895, Dr. Beatty practiced alone until 1910 when he decided to receive Dr. G. H. Keeney as his associate in the practice of medicine. This arrangement has proved to be pleasant and profitable to both physicians. Throughout his practice Dr. Beatty has been affiliated with the county, state and national medical societies.

During the horse and buggy era, Dr. Beatty experienced bitter hardships over a territory wide in extent through mud and water in the spring and fall and severe cold and blizzards in the winter. At one time he became lost in the night during a severe snow storm. His faithful horse finally forced his way to a haystack where the doctor was obliged to remain until dawn.

After forty-six years of faithful performance of duty, Dr. Beatty still carries on in the spirit of faith and courage which has not lessened with the years. In the early days he enjoyed fishing and horse racing. Today he lives a quiet and unassuming life devoting his entire time to the welfare of his patients. He is content to let his associate, Dr. Keeney look after the political affairs at the state legislature.

Dr. Beatty's friendly smile and gracious manner stamp him as a cultured gentleman of the Old School. With dignity and assurance he commands the respect and confidence of those who come in contact with him. Dr. Beatty has truly lived up to Sir William Osler's idea of a real physician—"In no profession does culture count for so much as in medicine, and no man needs it more than the general practitioner."

The veteran physician of Emmetsburg, Dr. J. W. Woodbridge, came to Mallard with Dr. E. D. Beatty in July of 1895. The kind hand of fate directed Dr. Woodbridge to Cylinder where he decided to locate his medical practice.

James Warren Woodbridge was born at What Cheer, Iowa, March 18, 1869. He was the youngest child of Samuel and Carolyn Woodbridge in a family of five children. His early education was received at What Cheer, where his father was engaged in farming. Later he attended the Keokuk College of Physicians and Surgeons and was graduated with the medical class of 1893. Dr. Woodbridge also took postgraduate work at the Chicago Polyclinic Hospital in 1902.

Locating at Cylinder in 1895, Dr. Woodbridge enjoyed an extensive practice and became the

first and only physician who ever practiced there. With the exception of military service in the World War, Dr. Woodbridge served this community until 1926 when he located at Emmetsburg, a short distance west of Cylinder.

On January 5, 1898, Dr. Woodbridge married Katherine Jensvold of Cylinder who had been a teacher before her marriage. Two children were born to this union; one daughter, Mrs. Verlin C. Bishop who now lives in Madera, California, and one son, Howard J., who is a dentist in Public Health Service at Boston, Massachusetts.

Throughout his entire medical career, Dr. Woodbridge has been a faithful member of the county and state medical societies. For many years he has also been an active member of the Masonic and Odd Fellow Lodges. He has served as county coroner for six years.



MAJOR J. W. WOODBRIDGE, M.D.  
Emmetsburg, Iowa  
1869—

Dr. Woodbridge answered the call of his country's service when he was commissioned May 31, 1918, as captain in the World War. He was sent to France in September of 1918. Leaving France on July 31, 1919, he returned to America and received his honorable discharge August 6, 1919. While in France he was advanced to the rank of Major in the Medical Corps.

Together with Dr. Beatty of Mallard, Dr. Woodbridge shares the honor and the distinction of having contributed forty-six years of medical practice in this county ranking second to Dr. Huston of Ruthven in seniority of service.



Dr. Th. T. Naae, the oldest physician in Palo Alto county, resides at Graettinger where he retired from active practice in 1940.\*

This venerable physician was born in Norway in 1862. He came to the United States in the early pioneer days. In South Dakota he taught common school and also worked on the farm and clerked in stores. Later he was graduated from Dixon College in Illinois. He taught mathematics and English at the Augustana Academy at Canton, South Dakota. Deciding to study medicine he attended the Keokuk Medical College, College of Physicians and Surgeons, where he was graduated in 1900. During the year of 1910 Dr. Naae studied and traveled in Europe.



DR. TH. T. NAAE  
Graettinger, Iowa  
1862-1941



For a short time Dr. Naae practiced medicine in Clay county and then located at Graettinger where he practiced for thirty-nine years until his recent retirement from active medical service.

Dr. Naae served as physician to the Board of Health for several years. He has also been president of Palo Alto County Medical Society for one year. Taking an active interest in community affairs Dr. Naae served as president of the school board for six years. He is a member of the Lutheran Church and has been superintendent of the Sunday School for fifteen years.

A man of literary talents, Dr. Naae has made valuable contributions in the field of literature. His most outstanding work is the "Key to Shakespeare" published by the Meander Company of Boston in 1935. He has received favorable com-

ments from literary critics both here and abroad. "Universitetets Botaniska Museum" at Oslo, Norway, has asked permission to use Dr. Naae's book as a college textbook. The invasion of Norway by the Nazis may prolong the reception of the doctor's book for an indefinite period depending upon the future position of this country with regard to the conquered nations of Europe.

May this worthy physician truly enjoy the fruits of his labor in the sunset days of his life. With the hope that God will give him many more years of true happiness and peace of soul, the writer wishes to leave this thought with him, "Vel, du gode og tro tjener! Du har varet tro over lidet, jeg vil saette dig over meget; gak ind til din Herres Glaede..."

The above mentioned physicians of the Horse and Buggy Era are followed by a complete enumeration of other medical men who practiced in Palo Alto County during this particular period from 1880 to 1910. A brief sketch of each doctor will be given under separate headings according to location.

#### *Emmetsburg*

Dr. J. C. Davies (treated in special section).

Dr. C. H. L. Souder became associated with Dr. J. C. Davies in 1881 after his graduation from a Kentucky Medical School in that same year. He came highly recommended and could speak the German language fluently. A few months later he established his own practice, but left in 1882.

Dr. J. L. Walker, was a homeopath and a graduate of Hahnemann Medical College and Hospital, Chicago, in 1881. A native of Peoria, Illinois, he came here in September of 1881. He had a splendid practice and was popular with the people. He was a short homely man, a Methodist and an active Mason. He used a trotting, rangy bay horse to pull his two-wheeled cart as he made his sick calls. He often rode his bicycle. He always looked at the bright side of life. He was a Republican and served as county coroner for several years. He owned extensive property interests in Illinois. After 1917 he left here for Peoria where he lived to be ninety years of age.

Dr. H. A. Powers (treated in special section).

Dr. Horace W. Burnard was graduated from the Chicago Medical College in 1889, and located here about 1900 buying out the practice of Dr. J. C. Davies. He served as surgeon for the Chicago Milwaukee and Saint Paul Railway, and also as examiner for several standard insurance companies. He left for Greeley, Colorado, when Dr. J. C. Davies returned from Idaho.

Dr. Thomas Aloysius O'Brien was graduated from the Washington Medical Department, St.

\*Dr. Naae died August 5, 1941, subsequent to the writing of this article.

Louis, Missouri, in 1890. He located here and practiced for nearly twenty years. He has retired from active practice and now resides with his son who is a physician in St. Louis, Missouri.

Dr. William R. Donnelly practiced here for only a short time. He came from Illinois but no one seems to know where he located after he left Emmetsburg.

Dr. William J. Nolan was graduated from Rush Medical College, Chicago, in 1887. His practice here was of short duration, and he went to Bridge-water, South Dakota.

Dr. H. W. Hunter was graduated from the University of Pennsylvania Medical College, Philadelphia. He came here about 1903 and devoted most of his time to the legal profession. He left for an unknown destination.

Dr. George G. Fitz was born in Astoria, Illinois, July 10, 1871, and moved with his parents to Iowa when he was a child. He was graduated in 1898 from the State University of Iowa, College of Medicine, Iowa City, and immediately located in Emmetsburg where he was associated with Dr. J. C. Davies. He later moved to West Bend where he practiced for about two years. In 1902 he located in Spirit Lake, and in 1910 moved to Placerville, Idaho. During the World War he served his country as surgeon to the 35th Infantry in San Antonio, Texas. He is now practicing medicine at Bancroft, Idaho, where he has been for the past eighteen years.

Dr. Robert Crichton Molison was graduated from the Medical College of the State University of Iowa in 1897. He practiced here for a few years specializing in surgery and gynecology. He was a member of the Upper Des Moines Medical Association and the Palo Alto County Medical Society. He left here for Marshalltown where he practiced for several years.

Dr. T. S. Hession of Hamilton, Illinois, located here in 1898 as a representative for the G. F. Harvey Company. A graduate of the College of Physicians and Surgeons at Keokuk, Iowa, in 1891, he practiced medicine for a short time in Illinois. He did not enter practice here although he was widely known among the medical men. He did some postgraduate work in Chicago with the intention of becoming an eye, ear, nose and throat specialist. Instead he accepted a position as manager of the Peoria branch of the G. F. Harvey Company. He passed away at that place in May, 1940.

Dr. J. L. Van Gordon, a native son of Palo Alto County, received his early training in the St. Mary's parochial school and public school here. Upon graduation from the high school here he

"read medicine" under the guidance and direction of Dr. J. C. Davies. He saw the first dose of diphtheria antitoxin administered in Palo Alto County and perhaps in the state of Iowa. In September, 1896 he matriculated at the College of Medicine of the State University of Iowa. In the spring of 1899 he was awarded an internship in the Mercy Hospital at Davenport, Iowa, where he served one year and nearly died from typhoid fever. He was graduated and received his doctor of medicine degree in April, 1901. In May of that same year he began his medical practice here and continued until June, 1913 when he moved to Des Moines to practice general surgery. In September, 1916 he removed to Minneapolis limiting his practice exclusively to proctology.

Dr. James Hennessy located in Palo Alto County about 1904. He was born in Limerick County, Ireland, where he spent his early life. He attended the Royal College of Surgeons at Dublin, Ireland. In 1902 he came to Toronto, Canada, and spent a short time there. Deciding to come to the United States, he took some medical work at the Medical College of Physicians and Surgeons at Keokuk, Iowa. Leaving Keokuk he established a practice at Graettinger but remained there for only nine months when he established a permanent practice in this community and continued here until his death, January 15, 1931. Dr. Hennessy married Agnes Davis at Toronto, Canada, January 26, 1903. To this marriage there was born a daughter, Louise, who is now employed in the recorder's office and a son, Russell. Throughout his twenty-seven years of practice here Dr. Hennessy was active in the local and state medical societies. He was also a member of the Knights of Columbus Lodge.

Dr. Francis Xavier Cretzmeyer located here in 1907. He was born at Waverly, Iowa, where he received his early education. He attended the Medical College of the State University of Iowa, graduating with the class of 1906, and became resident surgeon of the Mercy Hospital at Davenport, Iowa, before locating here. He married Mary K. Laughlin of this place, and has two children: a son, Francis X. Jr., and a daughter, Margaret Jo. Dr. Cretzmeyer served as county coroner for one term, and has been president and secretary of the Palo Alto Medical Society at various times. He is a member of the Knights of Columbus, the Rotary Club and the I Club. He has been a member of the Board of Education for several years. Athletics constitute his outside interests. He played on the State University of Iowa baseball team for three years. Dr. Cretzmeyer ranks next to Dr. J. W. Woodbridge as senior physician in Emmetsburg. He enjoys an extensive practice



and is especially kind and charitable to the underprivileged people.

#### *Ruthven*

Dr. Gilbert Baldwin (treated in special section).

Dr. T. E. Livingston became associated with the late Dr. Baldwin in the practice of medicine in 1888. He left here for Bode, Iowa, and is at present residing in Portales, New Mexico.

Dr. H. M. Huston, 1892 to the present time (treated in special section).

Dr. J. W. Buehler was graduated from the Chicago Homeopathic Medical College in 1895. He practiced here from 1900 to 1909 after which he left for Aromas, California, where he still resides. He has two sons in the medical profession.

#### *Graettinger*

Dr. Angus Carton was graduated from the University of Michigan, Department of Medicine and Surgery, Ann Arbor, Michigan, in 1892. He came here in 1893 but practiced only for a short time. No data are available as to his whereabouts after leaving here.

Dr. A. E. Burdick came here in 1893 following his graduation from Rush Medical College, Chicago. He practiced here until 1908 when he moved with his family to the state of Washington.

Dr. Th. T. Naae, 1900 to present time (treated in special section).

Dr. Patrick Joseph Hession took over the practice of Dr. A. E. Burdick in 1908. He was born in St. Louis, Missouri, May 26, 1863, and received his early education in Hamilton, Illinois. He later attended the College of Physicians and Surgeons at Keokuk, Iowa, where he was graduated in 1887. He was also a graduate from the pharmaceutical department of the College. Upon receiving his degree he began the practice of medicine at Hamilton, Illinois, and opened a drug store which he operated with his brother, Thomas S. Hession. In 1900 he changed his location to Kinross, Iowa. Three years later he moved to Norway, Iowa, and continued there until 1908 when he located here. In 1890 Dr. Hession married Rose Young of Hamilton, Illinois. To this marriage was born one son, Thomas J., who is now residing in Des Moines, Iowa, where he is general manager of the Western Adjustment and Inspection Company for the state of Iowa. While practicing here, Dr. Hession served as surgeon for the Rock Island Railroad for sixteen years and also served as health officer in this community. He was an active member of the Palo Alto County Medical Society and the Iowa State Medical Society. At one time he had an interest in the

ownership and operation of the local theatre. On June 6, 1928, Dr. Hession died at his home of cerebral hemorrhage after forty-one years of his eventful life had been spent in alleviating the physical ills of mankind. Dr. Hession lies buried with his wife in the Catholic cemetery in Keokuk, Iowa.

#### *West Bend*

Dr. Edsil W. Bachman became the first passenger to step from the train at the depot platform in 1882. He was a graduate of the State University of Iowa Medical College in 1887 and served as an interne at the Hospital for the Insane at Independence, Iowa. He practiced here and throughout the surrounding territory until 1900 when he moved to Estherville where he carried on his medical practice until his death in 1924. While practicing here he served in various capacities. In 1885 he was county superintendent of schools and became interested in the improvement of the certification of teachers. He was also appointed as a member of the Board of Examiners to meet at Storm Lake for the purpose of examining applicants for West Point cadetship. Just before and after 1900 he was State Senator from this district for two terms. He was a Mason, a Knight Templar, a member of the Consistory, an Odd Fellow, an Elk, and a member of the Knights of Pythias.

Dr. Frank D. Boody came here when Dr. Bachman left for Estherville. He was a graduate of the State University of Iowa Medical College in 1890. Practicing here for nearly ten years he left here for Williams, Iowa. In recent years he has practiced medicine at Grundy Center.

Dr. C. H. Hilger bought Dr. Boody's practice and remained here for a few years. He enjoyed a good practice and was moderately well liked.

Dr. A. H. Bishop came here about 1906. He had an extensive practice with some chiropractic opposition for a short time. In 1925 he moved to Lamberton, Minnesota, where he has since been located.

#### *Mallard*

Dr. Edgar Tregar came here in 1884 and practiced medicine until 1887. He was succeeded by Dr. Everett from 1888 to 1894. Dr. Phelps practiced here from 1890 to 1892. His successor was Dr. Frank Flynn who practiced here from 1894 to 1895.

Dr. Edward D. Beatty located here in 1895 and has remained to the present time (treated in special section).

*Ayrshire*

Dr. A. G. Smith located here in 1892 following his graduation from McGill University, Montreal, Canada. He practiced here for a few years.

Dr. J. J. Craig began his medical practice shortly after his graduation from the Medical College of Physicians and Surgeons, Keokuk, Iowa, in 1896. He came from Dallas County to this place. Dr. T. F. Kilbride also practiced here for a short time with Dr. Craig after which he went to Lennox, South Dakota, where he died.

Dr. E. E. Morton was graduated from the Keokuk Medical College of Physicians and Surgeons in 1898. He came here in February, 1902, and practiced until 1917. He is now retired and resides with his son in Des Moines, Iowa.

Dr. Thomas F. Duhigg located here in 1904 buying out the practice of Dr. Morton, who later returned. Dr. Duhigg received his medical training at Drake University and the Jefferson Medical College in Philadelphia. He is now in the United States Navy Recruiting Station in New York.

Dr. W. P. Sherlock—No data.

*Curlw*

Dr. H. B. Jones came here in 1882 followed by Dr. Fred L. Adams in 1898. Dr. Adams was graduated from the State University, College of Medicine, Iowa City, in 1898. After practicing here about twelve years he left for Wesley, Iowa.

*Cylinder*

Dr. J. W. Woodbridge, 1895 to 1926, (treated in special section) was the first and only physician here.

*Depew*

Dr. E. Hanson practiced here for a short time in 1897. He left for the West and Alaska where he prospected for gold. He is now at St. James, Minnesota.

*Rodman*

Dr. W. W. Bowen came here in 1894 and practiced for a few years. He later located at Fort Dodge where he was active in medical work until his retirement in 1940.

Thus we come to the close of the Horse and Buggy Era that marks the gradual passing of the family doctor who was the intimate friend and advisor of the patient. His sickrooms were secular confessionals in which he practiced a rare

priesthood. Robert Louis Stevenson aptly expressed this eulogy to the family doctor when he said, "There are men and classes of men that stand above the common herd; the soldier, the sailor and the shepherd not infrequently, the artist rarely, rarelier still the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has such as is possible to those who practice an art, never to those who practice a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sickroom, and often enough, though not so often as he wishes, brings healing."

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PART III. THE MODERN ERA, 1910-1941

This medical history would not be complete without honorable mention of the doctors who emerged into medical practice during the Modern Era from 1910 to the present time. Beginning with Dr. George H. Keeney who located in Mallard in 1910 we come to the present year which introduces the newest and youngest addition to the Palo Alto County medical force, Dr. William P. Davey who located at Emmetsburg in 1940. All those who have practiced in this county within this period will be enumerated under separate headings according to location.

*Emmetsburg*

Brereton, Harold Linhoff, M.D., F.A.C.S. Born at Creston, Illinois, July 17, 1885; graduated from High School, Waverly, Iowa, 1904; B.S., Grinnell College, 1909; taught chemistry in the high school of Worthington, Minnesota, 1910-1911; M.D., Rush Medical College, University of Chicago, 1914; interne, Cook County Hospital, Chicago, 1914 to 1916; fellow of the American College of Surgeons since 1929. Commissioned First Lieutenant, M. R. C., U. S. Army, August, 1917. Served until January 22, 1919. Married April 23, 1918, to Isbel Catherine Bayne of Fergus, Ontario, who died June 6, 1919. Married October 16, 1935, to Margretta Williamson of Washington, D. C. Practiced medicine in Emmetsburg, Iowa, from 1919 to the present time.

(To be continued next month)



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY**—By Forrest R. Davison, M.Sc., Ph.D., assistant professor of pharmacology, School of Medicine, University of Arkansas. The C. V. Mosby Company, St. Louis, 1940. Price, \$5.00.

**METHODS OF TREATMENT**—By Logan Clendening, M.D., and Edward H. Hashinger, M.D., medical department of the University of Kansas. Seventh edition. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.

**MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE**—Edited by Philip Bard, professor of physiology, Johns Hopkins University School of Medicine. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.

**THE 1940 YEAR BOOK OF GENERAL THERAPEUTICS**—Edited by Oscar W. Betha, M.D., professor of clinical medicine, Tulane University School of Medicine. The Year Book Publishers, Chicago, 1941. Price, \$2.50.

**PROCTOLOGY FOR THE GENERAL PRACTITIONER**—By Frederick D. Smith, M.D., formerly associate in proctology, Graduate School of Medicine, University of Pennsylvania. Second revised edition. F. A. Davis Company, Philadelphia, 1941. Price, \$4.50.

**ACCIDENTAL INJURIES**—By Henry H. Kessler, M.D., attending orthopedic surgeon, Newark City Hospital. Second edition, enlarged and thoroughly revised. Lea and Febiger, Philadelphia, 1941. Price, \$10.00.

**CLINICAL PELLAGRA**—By Seale Harris, M.D., professor emeritus of medicine, University of Alabama. The C. V. Mosby Company, St. Louis, 1941. Price, \$7.00.

**TEXTBOOK OF PEDIATRICS**—By J. P. Crozer Griffith, M.D., emeritus professor of pediatrics, University of Pennsylvania; and A. Graeme Mitchell, M.D., professor of pediatrics, University of Cincinnati. Third edition, revised and reset. W. B. Saunders Company, Philadelphia, 1941. Price, \$10.00.

**HEMORRHAGIC DISEASES**—By Kaare K. Nygaard, M.D., former fellow in surgery, The Mayo Foundation. The C. V. Mosby Company, St. Louis, 1941. Price, \$5.50.

**TECHNIC OF CONTRACEPTION CONTROL**—By Robert L. Dickinson, M.D., and W. E. Morris, M.D. The Williams and Wilkins Company, Baltimore, 1941. Price, fifty cents.

**CARDIAC CLASSICS**—By Fredrick A. Willius, M.D., and Thomas E. Keys, M.D. The Mayo Clinic. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.

**AMERICA ORGANIZES MEDICINE**—By Michael M. Davis. Harper and Brothers, New York, 1941. Price, \$3.00.

**ESSENTIALS OF DERMATOLOGY**—By Norman Tobias, M.D., senior instructor in dermatology, St. Louis University. J. B. Lippincott Company, Philadelphia, 1941. Price, \$4.75.

**ELIMINATION DIETS AND THE PATIENT'S ALLERGIES**—By Albert H. Rowe, M.D., lecturer in medicine, University of California Medical School. Lea and Febiger, Philadelphia, 1941. Price, \$3.00.

## BOOK REVIEWS

### STRANGE MALADY

By Warren T. Vaughan, M.D. Doubleday, Doran and Company, New York, 1941. Price, \$3.00.

This volume is the story of allergy written especially for the layman, although it provides interesting reading for the physician as well.

It accurately records the history and chronology of allergy in the narrative form. This book performs a very definite service since it goes a long way toward dispelling much of the mystery surrounding allergy. It explains in detail and in terms the layman can readily understand the physiology and pathology which take place in the allergic individual. Many graphic illustrations show, perhaps better than words can explain, the theoretical aspects of allergy.

The physician will do well to read this book himself and recommend it to his patients. J. W. Y.

text, it seems to be a valuable supplement to such texts.

The book has one noteworthy quality. It gives attention to the detail of the technic of many common procedures, too "simple" to require the attention of the authors of the more comprehensive texts.

R. F. B.

### PAPERS OF WADE HAMPTON FROST

Edited by Kenneth F. Maxey, M.D. The Commonwealth Fund, 41 East 57th Street, New York, 1941. Price, \$3.00.

Into one volume have been gathered twenty of the outstanding papers of an outstanding pioneer in public health. From a background of rich experience in all phases of public health and having learned his lessons "the hard way", Dr. Frost became one of the most noted epidemiologists in the country and was a teacher of epidemiology at the time of his death. Dr. Frost thought so modestly of his own abilities that many of the papers included in this book are no longer available in printed form. A committee, appointed in 1938, reviewed all the available papers of Dr. Frost and selected twenty which were outstanding in their contribution to public health, covering four subjects; investigations of epidemics, stream pollution and water purification, endemic acute infectious diseases and studies of infectious diseases of long duration.

Most of this material has been printed at some time, but now in one volume we have a book that at once is a valuable reference for anyone interested in public health and a fitting monument to a lovable character and a truly great man.

R. M. S.

### THE ESSENTIALS OF APPLIED MEDICAL LABORATORY TECHNIC

By J. M. Feder, M.D., director of laboratories and allergic service, Anderson County Hospital, Anderson, South Carolina. Charlotte Medical Press, Charlotte, North Carolina, 1940.

The stated purpose of this book is to present the details of how to build and conduct an office or small hospital laboratory at small cost. It is a well-illustrated volume which contains a wealth of practical, useful information for workers in small laboratories. Although it is not a complete clinical laboratory

### PROCTOLOGY FOR THE GENERAL PRACTITIONER

Frederick C. Smith, M.D., formerly associate in proctology, Graduate School of Medicine, University of Pennsylvania. Second revised edition. F. A. Davis Company, Philadelphia, 1941. Price, \$4.50.

The volume under discussion is a new book, worthy of notice. The subject of proctology is completely covered, including venereal diseases of the anus and rectum, parasites and neoplasms.

In the chapter on hemorrhoids, various methods of treatment are evaluated. Figures are quoted to the effect that 25 per cent of cases are amenable to surgical treatment only, the remainder being suitable for injection treatment, combined at times with office surgery. In another chapter, two conditions often confused, namely, lymphogranuloma inguinale, and granuloma inguinale are clearly described. The former is the so-called fourth venereal disease and is caused by a virus; the latter is caused by the bacillus of Donovan. Appropriate treatment for each condition is fully described.

The text is profusely illustrated with drawings and photographs. The only criticism one might find is that many of these have been taken from other standard textbooks of proctology. The general practitioner will find this book valuable for reference in both common and uncommon diseases of the rectum and anus.

J. M. B.

### EFFECTIVE LIVING

By C. E. Turner, Dr. P. H., professor of biology and public health, Massachusetts Institute of Technology; and Elizabeth McHose. The C. V. Mosby Company, St. Louis, 1941. Price, \$1.90.

The authors state in the preface that "The purpose of this book is to help youth discover ways of effective living." With this purpose in mind and realizing that youth requires facts and not dogma, they approach the subject in three general phases—effective living for the individual, the family and the community.

Each general subject is taken up in several "units", each of which is more or less complete in itself. Following each unit is a "score sheet" in which the reader is asked several questions about himself based on the material just read. Then follows a section on "Problems and Activities" which forms the basis of a good quiz on what the student has read, and indicates lines that can be taken for further study of the same subject. An ample list of references is included with each unit.

Two appendices are included in the book; one on "The Control of Communicable Diseases" and another on "A Plan for Effective Coordination." The latter is especially interesting in that it points out the myriad of places this material can be effectively used in the regular school curriculum. If any clarification of the simple language of this book is needed,

a glossary of definitions of the more technical terms is included.

This book is really a textbook and as such would merit investigation by the high school teacher who wishes to give a good course in health. For this purpose the book can be recommended, because it should be studied and not just read.

R. M. S.

### THE 1940 YEAR BOOK OF GENERAL THERAPEUTICS

Edited by Oscar W. Bethea, M.D., professor of clinical medicine, Tulane University School of Medicine. The Year Book Publishers, Chicago, 1941. Price, \$2.50.

This fortieth anniversary volume of the Year Book of General Therapeutics is of two-fold interest. It presents a short but complete story of the origin, and the many difficulties encountered while processing the book into a small compact volume of useful knowledge. A brief summary of the therapeutic literature for all phases of medicine is contained in the volume. The sulfonamide compounds are very completely reviewed, as well as all other important therapeutic measures. Dr. Bernard Fantus is given full credit for his untiring energy and skill in producing it.

The reviewer considers this volume a valuable book for all practitioners of medicine.

A. M. S.

### CLINICAL PELLAGRA

By Seale Harris, M.D., professor emeritus of medicine, University of Alabama. The C. V. Mosby Company, St. Louis, 1941. Price, \$7.00.

This is probably the most complete and thoroughly up-to-date treatise on pellagra yet written. Dr. Seale Harris, former professor of medicine at the University of Alabama and of the Seale Harris Clinic, has recorded in a refreshing narrative style the history, theories of genesis, clinical observations and present day concepts of pellagra. Included in the book are reports and articles from nine collaborators who are some of the leading students of pellagra today.

The history and historical review are very complete. Clinical investigations include reports from Duke University, the University of Georgia, Vanderbilt University, the Medical College of Virginia, and Northwestern University. The symptomatology and diagnosis occupy almost one hundred pages profusely illustrated with photographs showing the dermatitis and stomatitis. The differential diagnosis and the close relationship of pellagra, sprue, pernicious anemia and allied deficiency diseases are extremely well presented. Prophylaxis and treatment are thoroughly covered in great detail.

The author's style makes this book an easy one to read from cover to cover and it is heartily recommended to all students of deficiency states.

A. L. J.



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### THE MEDICAL CITIZEN OF 1941

NATHAN B. VAN ETEN, M.D.  
New York, New York

Once again the Medical Society of the State of Iowa is celebrating the progress of medical education and the evaluation of medical ethics as applied to the practical care of sick people, who compose important elements of our American society. Once more the servants of the sick are assembled to reconsecrate themselves. The community of interest which has developed among physicians, nurses and social service workers has been largely promoted by the desire in all of them to educate themselves in the best spirit and technic of human service.

Institutions of learning are valuable to our American society in proportion to the strength of their effort to build up intelligent loyalties to American ideals. Too many physicians are, in a sense, cloistered within their own professional lives. Too few are active participants in civic life. America has greater need for medical citizens today than at any time in our history. She needs people who are educated in the technics of the sciences of biology, of medicine and sociology. She needs citizens who will look to the future while standing upon the solid fundamentals which are the underlying strength of our civilization. She needs citizens who will be strong enough to combat ideologists who are aiming at her destruction by revolution.

In May, 1941, we are at the beginning of a great struggle abroad with organized autocracies and, at home, with organized revolutionists, a few of whom, I regret to say, are within the ranks of the medical profession. Some of these physicians openly express the thought that our social structure must be completely leveled and completely rebuilt, before we can hope for liberty and justice and world-wide peace. Much of the unrest may

be due to the fact that the issues are obscured while our government waits for the force of public opinion to push it in the path it would like to follow. Medical citizens have expressed the wish to serve the country if and when they are needed, but they are becoming impatient of uncertainty. Is America at war, or is America merely building material for sale or exchange? Is the mobilization of a million men just for exercise, or has it a definite objective abroad or at home? Thousands of medical citizens who are lukewarm about going to training camps would be eager to play their parts in a real national emergency. They want to know what mobilization of men and materiel really means.

The medical citizen of 1941 faces a difficult future. If the country goes to war, more than 40,000 physicians will be needed in our armed forces and will be withdrawn from the kind of public service they now carry on. They are not like ordinary trainees, because most of them are at active work and may lose their places in their medical progress and, at the end of a war, return to vanished opportunities. Whatever happens, a great mobilization is in progress. Armies at home or armies abroad must have medical care, and many worthwhile careers will be dislocated. The education of the successors of these physicians of 1941 must be given serious consideration. What shall be the content of their education to fit them for the best service to the nation? The civilian population will need good physicians. Shall we think of the small towns as well as the big towns? Shall we train soldiers or civilians, or both? Shall we try to teach loyalty to America's future, or shall we be indifferent about it? Shall we try to send into the new America the good citizens she needs, or shall we think that we have discharged our duty if we confine our teaching to professional technics? Shall we lend the weight of our influence to mobilizing public opinion and to bringing order out of confusion? Common ground must be found where isolationists, pacifists, nationalists and internationalists, and all other pa-

\*Presented before the Ninetieth Annual Session, Iowa State Medical Society, Davenport, May 14, 15 and 16, 1941.

triotis may exercise their loyalties in support of the best interests of our country. The functions of the medical citizen need to be carefully integrated with all efforts to preserve and to restore the morale as well as the physical health of all our people.

The American Medical Association has played the leading rôle in nearly a century of medical progress. Its history records year by year the constant modernizing of scientific thought. The moderns of 1841 were just as up to date as we are in 1941. They immersed themselves in new problems and emerged advocates of new science, even as we today are studying with amazement the evolution of a new chemotherapy. Our modern schools are engaged upon an educational experiment which will never be finished. None of us can practice the kind of medicine we were taught twenty, thirty, forty or fifty years ago. In our undergraduate days we were compelled to absorb more required education than was given to any other profession, and yet most of the good medicine of fifty years ago has merely an historical interest.

No one questions the sincerity of the schools in their efforts to prepare the student to practice his profession, but one may believe that the schools attempt to crowd so much into the undergraduate that only the exceptional student can digest his overfeeding. When the student comes to his internship, he quickly realizes that applying his knowledge to the patient problem is a plunge into deep water. I am inclined to believe that one of our country's greatest needs is good, average practitioners of clinical medicine to take care of average patients. Most of the teachers in the schools are themselves specialists, and, if they are sufficiently luminous, they inspire their students to follow their example. Consequently, many of our young internes have already hitched their wagons to stars before they come to the hospital and seem uninterested in the general clinical procession found in rotating services. Some of them try to cut short their hospital stay in order to go into special fields.

I would like to see educators work out the problem so that medical study should begin at least two years earlier than it does now, and so that it should furnish four years of clinical work as a good education in internal medicine, obstetrics, traumatic, minor surgery, physical therapy and some basic instruction in the application of preventive medicine to the needs of the public health. I would like to see all specialty teaching postponed until it is demanded by the graduate stu-

dent which, of course, would involve the creation of graduate medical schools in our universities.

In the interest of continuing and refreshing education for all practicing physicians, I would like to see our medical schools carry on extension courses in cooperation with organized medicine. Reading papers on scientific subjects before medical societies is not enough. A few physicians may be able to return to their schools for graduate work, but most of them are unable to do this, and much needed education must be carried to them. I believe that the development of graduate education points the way to desirable changes in our entire educational system, when practical clinical work shall prepare young and old for the realities of their professional and civic lives.

I presume that a few physicians are dreaming of the future of medicine but most of them are concentrating upon the best solution of their immediate clinical problems. Unfortunately they must be acutely conscious now that they must do a good deal of altruistic thinking, that they must look out of the windows of their laboratories and their consulting rooms into the fields beyond, if the world is to be made not only a better place in which to live but if it is to be rescued from real perils which threaten to destroy our happy civil privileges of thought and speech and action. Hard labor, hard study and sometimes inspired leadership have carried American medicine to the supreme place among the health services of the world. Retrospectively, the story of American medicine is full of triumphs over stumbling ignorance. The romance of the doctor, as he progressed from empiricism to scientific controls, and from the saddlebag to the automobile is a thrilling story of devotion to idealism.

The last fifty years is the inclusive period of so-called modern medicine. Modern medicine is the end result of the evolution of individual efforts to cure the sick, restore them to functional usefulness, and to enlist community support in the prevention of disease. Organized medicine has made marvelous contributions in coordinating the efforts of individuals and in supporting high standards of ethical practice which have been of the greatest importance to the general public in protecting them from swindling quacks and stupid incompetents. Exemplary individuals have always inspired imitation. Outstanding genius has always had its followers, but organization has always been necessary to direct the freedom of fraternity along the roads which lead toward the greatest good to the greatest number. Individual physicians accepted regulation by accepting the



rulings of the county medical societies. The county societies merged their idealism with that of the state medical societies which, in turn, formed the great federacy which is the American Medical Association, with a membership of 119,000 physicians.

It was a natural desire of these members that every function should work as efficiently as possible, that its motivation should be inspired by the highest ideals and implemented by the best educational equipment. So, medical schools were encouraged to step up their curricula to the best of the world's standards. This has been done, and today medical education in America has no superiors. It was a natural and necessary desire that the working tools and the workshops of the doctor should be developed into and maintained as effective instruments of public service, so the hospitals were modernized and encouraged and humanized and charged with definite responsibility. It was a natural desire of every physician to enjoy hospital privileges, but the necessity of giving only the best possible service to the community imposed limitations and developed graded and classified services, so that the patient could be guaranteed competent care. The medical student is therefore trained to become an effective servant of the hospitalized sick. He lives for a year or more in a hospital, as a cog in a public service machine, as well as a licensed practitioner with all the rights that he may be competent to use in the community.

During the last fifty years, America became motorized and developed such an exhausting speed that many failed in the struggle to keep up with the procession which endlessly tried to find new frontiers. Life became so externalized by one scientific revelation after another that domestic and religious loyalties were often forgotten in the mad pursuit of new objectives which were undreamed fifty years ago. Elusive ideals carried us through two wars without satisfaction, and now we have come to a time when all that we have cherished must be defended against destruction by disintegration or external attack.

It is obvious that a European civilization is falling to pieces and a new social mosaic must appear. Whatever our sympathies, we must prepare ourselves to play an important part in a new world order. No one can accurately plot the future, but all Americans will be deeply concerned in the common cause of defending the nation and in promoting the security of the last and only surviving peaceful democracy. We have seen that reversions from democracy to autocracy in Europe seemed to have been caused by long disintegration

of character, by subsidizing the discontented to gain their support of government control, under the aegis of paternalism. If we are wise, we must apply these lessons to our own evolution, not only to the peculiar problems concerned with our cosmopolitan society but to the development of the special fundamental, social problems concerned with the protection of the physical, mental and moral health of our people.

We have come to a time when every health agency must be mobilized for national defense. In a time of national emergency we must watch our steps lest we be lured into bypaths which may lead to a surrender of the practice of medicine to government control. We must be careful not to lower our standards of medical education. The American people must be assured the best care we can give them.

The Committee on Medical Preparedness of the American Medical Association has been working for ten months to mobilize the medical profession for field and home service. It is unanimously of the opinion that no medical student should be inducted into service, that good premedical students should not be diverted from their ambitions, and that the flow of educated physicians must be maintained at the present rate. Whether we shall continue to enjoy a modified peace or shall become involved in active warfare, the program is planned for at least five years. Unless medical teaching shall be continued, our medical service, both private and institutional, will be quickly inadequate. Hospitals are already losing internes faster than they can be replaced. Let physicians take the leadership for which they are qualified. Let them emerge from their conservative shells and demand sane and progressive programs which will assure a good, continued medical service.

The United States of America has already been invaded. Advance agents have exerted subversive influences in every part of our country. They have sabotaged the mind of youth, and even boldly drilled in uniform. Many of you remember that these organized movements have been actively going on in this country for the last twenty-five years. Some of you have personal knowledge of the effects of this quarter of a century of foreign propaganda. It is reflected in the full approval of Hitler by an important, retired American officer and, within a few weeks, by the expression of a distinguished businessman that he waits with impatience for an American dictator. The ideals of popular government which were promoted by Washington, Jefferson and Lincoln are only remembered in political oratory. Petty dictators are

already here. Our intelligentsia are lazily surrendering the domination of our great cities to organized gangsters. Shall we awake before it is too late? It is very late to withdraw hospitality from those foreign visitors who now enjoy the safety of asylum, but every effort should be made to convert them to an appreciation of the benefit of living in an advanced democracy. Failing in this, they should be returned to the sources from which they came.

The seismograph is recording the workings of agitators in the field of labor and of education at every social level. Widening cracks are appearing in the surface of our economic, religious and social systems, which may engulf our democracy. Every potential leader of public opinion in the United States must be mobilized to defend our country against ideas which are destroying the values of our civilization. All professionals, every physician, every dentist, every pharmacist, every lawyer, every clergyman, every teacher, every trained nurse, every trained thinker, must be enlisted in a continuous campaign of defense, defense against those forces which are destructive of our religions and of our faith in our fellowmen, so vital to the preservation of the integrity of our national life.

A jury has returned a verdict of guilty against the American Medical Association for alleged violations of an act to prevent restraint of trade. The American Medical Association is an educational institution. It has never been in business and never in trade. Its aims are the promotion of medical education and the protection of the American people from the deceptions of incompetents and quacks. The American Medical Association will continue to try its case before the court of public opinion and will continue to try to serve the American people to the best of its ability and will do so long after the prosecutors have passed from the scene.

The excellent health of the American people is largely the result of the efforts of the organized profession of medicine. The physicians of America are fundamentally and earnestly patriotic, and I am confident that they will carry on the best of their traditions in their continued battle for the American way of life and the spirit of a free democracy.

Abraham Lincoln said: "As I would not be a slave, so I would not be a master." \* \* \* "This expresses my idea of democracy. Whatever differs from this, to the extent of the difference, is no democracy." I believe that the American physician of 1941 is the best physician in the world. I hope that he will prove himself to be an effective citizen.

## SINUS DISEASE: SOME PRACTICAL CONSIDERATIONS\*

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It has been our experience that many physicians as well as laymen apply the term "sinusitis" rather loosely to all disturbances in the region of the nose and nasopharynx many of which may or may not come within this category. Because of this vague application of the term practically everyone who has a postnasal drip, nasal obstruction, common cold in the head, sneezing attacks, headache or impaired olfactory sense, believes or has been told that he has sinus disease. While I am willing to admit that there has been a great increase in the number of sufferers from this protean malady for reasons which I will soon discuss, nevertheless, I should like to point out that too often the term is used without a clear idea as to what sort of pathology may be present. It is well to know and continually to bear in mind that not only is there a difference between the sinuses of one individual and another based on hereditary and environmental factors but there is a wide variety of pathologic states in which these structures may exist, resulting in a multiplicity of symptoms which manifest themselves in innumerable combinations. Furthermore, we must take into consideration the fact that the response to a pathologic state, regardless of its degree, is as variable as are the temperaments and psychic makeup of patients as individuals. When we consider the constitutional states which influence and frequently complicate a nasal condition, we finally begin to realize that to evaluate a given case properly one must do much more than merely look into the nose or x-ray the skull.

To begin let us say that by sinusitis we mean a definite pathologic state existing within one or more of the air spaces adjoining the nasal chambers with which it or they are in direct communication. This may be the result of trauma, infection or obstruction which gives rise to symptoms, local or remote or both. In other words there must be demonstrable pathology before we can properly apply the term sinusitis. The fact that in many instances the physician is unable to demonstrate the existing pathology satisfactorily does not necessarily exclude the existence of the disease any more than the presence of symptoms can alone make the diagnosis.

A little while ago I stated that there had recently been an increase in the incidence of sinus disease. This statement will bear amplification. Let me put it this way. I am convinced that sinus

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disease is the product of our present-day civilization, more particularly as applied to life in the big cities. The factors involved are smoky dusty atmosphere, overheated dwelling places, overeating with little or no outdoor exercise, excessive smoking and nervous tension, the result of the strain and stress of city life. These are all habits or conditions unconsciously thrust upon us, of which few of us are acutely aware but which in the course of time make their imprint on our physical economy. Studies of the physiology of the nose have proved that dryness of the inspired air definitely slows down the rate of ciliary activity, thereby weakening the first defense against infection. Since we have become more keenly aware of the function of ciliary activity and its vital bearing on the nasal defense mechanism we have begun to appreciate the relationship of the air we breathe to this function. This fact should be more widely understood than it is. Unquestionably sinus disease is more common in communities where the air is smoky and dusty than in rural districts. In some of the more progressive communities, efforts have been made to abate the smoke nuisance with more or less effect but there is still considerable room for improvement along these lines.

I mentioned overheated dwelling places as a contributing factor to sinus disease and this fact also deserves further stress. Comparing the modern apartment, usually steam heated, with the old-fashioned house that was only partly heated by a grate fire or stove, I am sure that the latter was far more healthful despite its discomforts and hardships. We know that the air we breathe must not only be warmed but also moistened to make it fit for reception in the lower air passages. The nasal mucous membrane performs this function very well up to a certain point. As long as the inspired air maintains an average humidity of 35 degrees, the burden thrown on the nasal mucosa is average and normal; but when the humidity in our dwelling places falls to zero and remains there for long periods of time, it is inevitable that the nasal tissues must work overtime to supply the deficiency and that sooner or later they will fall down on the job or else become hypertrophied in an effort to keep up with the abnormal demands. If the mucosa fails to supply sufficient moisture, dryness will ensue and the pulmonary tract will suffer as well; therefore, two areas of diminished resistance have been established, namely, the nasal passages and the lower air passages meaning the tracheobronchial tree and alveoli of the lungs.

On the other hand, if the nasal mucosa hypertrophies as it frequently does, we find nasal obstruction of greater or lesser degree, interference with

the ventilation of the sinuses and the formation of a mucous secretion that is more viscid than normal, flowing less freely over the surface and tending to accumulate and further clog the passages. A vicious circle is thus established tending more and more to impair the local resistance to infection with the result that the individual contracts frequent colds with simultaneous or subsequent involvement of the sinuses. At the same time the lower air tract suffers and the patient has frequent attacks of bronchitis with resulting prolonged cough and expectoration. I am not alone in maintaining that overheating of our dwelling places without compensatory moistening of the air is responsible for a large proportion of the chronic sufferers from sinus disease whom we encounter in our daily practice. A number of observers have from time to time called attention to this fact and advocated proper means for ameliorating this condition. The fact that many patients have testified to the added comfort and the absence of colds, as a result of increasing the humidity, is one that I cannot emphasize too strongly nor advertise too widely.

What I have said about dry dusty air and the absence of humidity applies as well to the question of the influence of smoking on the respiratory tract. We have in recent years seen a great increase in the amount of tobacco consumed. Not only have women in the present generation become the largest users of cigarettes but a great many men who formerly smoked cigars have gone over to cigarettes. While it may be argued that the cigarette contains only a fraction of the amount of tobacco found in a cigar it must be pointed out that cigarette smokers seldom are aware of the number they consume and furthermore most cigarette smokers inhale which is not the case with cigar smokers. Since the harmful influence of inhaled smoke is to a large degree the result of the drying effect on the mucous membrane it should be quite evident that the smoker who inhales is doing himself more harm than the one who does not. I may add that some women are among our worst offenders. I cannot quite reconcile myself to the avidity with which the present generation of women has appropriated the vices of men.

Smoking is a bad habit as we all know, but under certain conditions and in certain individuals it is more harmful than in others. Women who smoke a great deal are usually the sheltered type who spend a great deal of their time indoors, and the worst offenders are the card addicts. I have known many of this type who think nothing of consuming a whole pack of cigarettes at one bridge game. It is impossible for these women to avoid

the deleterious effects of inhaling that much smoke, particularly if the process takes place in a heated room where the air becomes thoroughly dried out. As for us men, the case against us is pretty bad! The stress and strain, the hurry and bustle, the rushing to and fro in the large centers where we live, impose demands on our nervous economy that we are frequently unable to meet and which drive us to habits that are harmful. People smoke whenever and wherever they can. No place is sacred except possibly the church, which unfortunately too many folks are in the habit of avoiding. Despite the claims of various cigarette manufacturers that their particular brand has been rendered less irritating by this, that or the other process, the fact remains that if sufficient tobacco smoke passes over the membranes of the nose and throat certain deleterious effects will eventually result. It is the amount one smokes that counts, not the brand.

I mentioned overeating as one of the contributing causes of sinus disease. Perhaps I should qualify the statement by saying that it is not only the overloading of the digestive tract with more food than the economy requires, thereby storing up more waste products than can be comfortably excreted, but more especially I wish to call attention to errors in diet which contribute so much to the formation of irritating by-products which ultimately exert a harmful effect on the respiratory tract. We have seen any number of patients with recurring colds and chronic sinus trouble which could be definitely traced to the ingestion of too much carbohydrate. As a matter of fact we see more cases of chronic nasal troubles in the children of the well-to-do than among the poorer classes. It is not uncommon to see apparently well-fed and robust children brought in for the relief of recurring colds and nasal discharge, patients whom we would expect to be free from such complaints because of their excellent hygienic surroundings. Nevertheless, it is a fact attested to by excellent observers, such as Jarvis and his school, that overingestion of carbohydrates seems to be at the bottom of this trouble in many instances. The same authors have also called attention to the fact that for a great many people highly milled flours are the cause of chronic nasal discharge. Cases of this type have obtained relief by switching to whole wheat or oatmeal breads and taking small doses of insulin. Just how these observations are to be scientifically explained would lead us too far afield in this presentation. Those who are interested would do well to read the excellent articles of Selfridge and Jarvis who have contributed much to our present knowledge of the subject.

For me the facts are impressive especially when I correlate them with my own clinical observations. I have seen children who were given vitamins in adequate doses over a long period of time in the expectation of preventing recurring colds without the slightest effect so that it has seemed to me to be a futile gesture. I believe in the administration of vitamins whenever a vitamin deficiency has been demonstrated and certainly there are many individuals of whom this is true; but I can state definitely from my own observations that the routine administration of vitamins for the prevention of colds is a waste of time and money and usually proves a disappointment to the patient.

Before leaving the topic of general or constitutional causes I should like to call your attention to the fact that there is a very marked and wide variability in the susceptibility to respiratory infections among various types of people. Heredity often plays an important rôle, although this fact is frequently not observed. Albrecht and Schwartz, studying heredity in relation to diseases of the ear, nose and throat, proved conclusively that families in whom there was a tendency to overdevelopment of the mucous surfaces with coincident underdevelopment of the areolar or fibrous substrata were much more susceptible to infections than those in whom the reverse was true and they were able to trace out the embryologic factors that determined these tendencies. Frequently one can pick off a case of this type because of the peculiar spongy type of mucosa lining the nasal chambers, a mucosa that is neither pale like the allergic types nor deep red as in the hyperplastic or chronically inflamed cases. Often as not these patients appear robust, yet not florid and frequently one finds them to be low in their basal metabolism or else manifesting other stigmata of endocrine disturbance. As a matter of fact the whole subject is closely tied up with the question of endocrine dysfunction which may be the reason for the original tendency to the type described. Certainly it is a factor not to be ignored. Many a patient with chronic hyperplastic sinusitis and recurring colds that failed to yield to the usual therapeutic measures has found complete relief from the administration of thyroid extract or other glandular extracts. We have found this to be particularly true of the adolescent and menopausal stages. When the physician is conscious of these possibilities he is less likely to overlook the possibilities and therefore be in the position to render his patient more intelligent and satisfactory service.

Naturally one cannot blame all sinus disease on constitutional causes. In most cases we do find local causes which contribute greatly to the etiol-



ogy and which must be eliminated. I need only mention such common factors as adenoids, hypertrophied tonsils, deviated septum, polypi and other forms of obstruction with which you are all familiar. I am sure that the otolaryngologist does not overlook these items, and I am equally sure that the vast majority of medical men in other fields are also aware of the importance of providing adequate nasal respiration. We can, therefore, pass this phase of the subject with the brief mention already made and go on to something more timely.

I should like now to go back to the beginning of my talk by referring to an opening statement to the effect that the term "sinus disease" is frequently misused. For instance, it is commonly assumed by a great many people that recurring headaches mean sinus trouble. As a matter of fact we find that very few cases of chronic disease complain of headache. It is certainly not an outstanding symptom in most types of the disease, although in certain types the location and character of the headache may be of diagnostic significance. Likewise, nasal discharge or postnasal drip may be the result of causes other than sinus involvement, as for instance the hawking due to excessive smoking. We could go all the way down the line enumerating the various symptoms which are found alone or in combination in various forms of sinus disease and show that each and every one of them may be caused by other conditions. Therefore, in order to clarify the matter it might be well to go from the negative to the positive and describe briefly the commonly accepted forms of sinus disease as we see them.

Fundamentally, we should look upon the sinuses in relation to the upper respiratory tract in the same manner that we consider the mastoid cavity in connection with the middle ear spaces and eustachian tubes. In both cases the fact that the lining membrane is directly continuous and of the same character means that when an inflammatory or infectious process attacks one portion, it is inevitable that the rest of the blanket should be involved to a greater or lesser degree depending upon the factors existing at the time. Otologists know that when a patient has an otitis media he has at the same time an inflammation of the lining membrane of the mastoid antrum and the connecting mastoid cells and therefore may be said to have an acute mastoiditis. The fact that most cases recover spontaneously simply means that local and constitutional conditions are favorable for the destruction of the infective agents and elimination of the by-products of the process before sufficient damage has been done to require surgery. Similarly when a patient develops an

acute rhinitis there is a coincident swelling of the lining of the adjoining air spaces or sinuses with consequent outpouring of secretion and subjective symptoms which indicate the process and which could be further substantiated by x-ray pictures. Practically all cases of acute rhinitis and acute otitis reveal cloudiness of the sinuses and mastoid cells in the roentgenograms. Since most cases of this type recover spontaneously or under proper palliative treatment it is illogical to assume that all patients must sooner or later come to the surgeon for treatment.

In dealing with acute processes in the nasal apparatus it is safe to assume that the mucosa of the sinuses is involved to a greater or lesser degree, and proceed to such measures as will facilitate the prompt resolution of the process. In a great many cases the onset is in the nature of a vasomotor response to an irritant. Many patients can recall the exact time when they experienced a slight chill or chilly sensation with subsequent nasal block followed by sneezing and profuse watery discharge. This may be interpreted either as a systemic reaction to chilling of the body surface or the reception within the nasal passages of a filtrable virus. In either case the fact remains that the primary reaction is vasomotor and if prompt measures are instituted it is possible in many instances to abort the process before bacterial invasion has taken place. There is still a great deal of merit in the old-fashioned method of dealing with this situation, namely, measures that are calculated to reverse the circulation from the splanchnic and other deeper areas bringing it to the surface and to induce diuresis and diaphoresis. I still believe in the efficacy of hot baths, hot drinks and Dover's powder and rest in bed. However, there are a great many people among whom the treatment just mentioned is considered outmoded and Victorian and is therefore rejected as unscientific. To yield to it would be considered an admission of weakness! Besides it involves the sacrifice of time. It is much easier to take some pills or tablets, or else run to the doctor for a treatment! Despite this trend I am still convinced that the best treatment for an acute upper respiratory infection is a hot bath, hot drinks, rest in bed in a room well supplied with moisture, perhaps a little aspirin or Dover's powder and a one per cent ephedrine solution dropped into the nose. Local treatment such as aspiration, irrigation or tampons come later and only if the patient shows by his symptoms and local findings that bacterial invasion has taken place and definitely localized itself in one or more of the sinuses.

There are certain instances when the process is of sufficient severity and extent as to threaten the

patient's security or well-being to such a degree that surgical procedures are indicated. Occasionally an acute frontal or maxillary sinusitis may be of such severity that the pain is continuous and unrelieved by simple measures, fever is present and drainage through the normal passages cannot be established by shrinking of the nasal mucous membranes. In these cases it is permissible and indeed urgent that an opening be made into the involved sinus to permit the secretions to discharge and air to enter. In the case of the frontal sinus, a small trephine opening is made through the floor of the sinus near the internal angle of the orbit and a small rubber tube inserted for drainage. In the case of the maxillary sinus instead of puncturing with a needle it is better to use a fairly large size trocar through the inferior meatus or even through the canine fossa so that the opening will remain patent long enough for the process to subside without the necessity of subjecting the patient to frequent punctures for irrigation. Once in a great while we will encounter one of those fulminating acute frontal sinusitis with early involvement of the venous system whereby infection is carried into the diploe of the bone with consequent spreading osteomyelitis or cerebral involvement. All rhinologists are familiar with this picture and the literature has in recent years been full of reports of such cases and details as to its management. These patients require early radical surgical treatment and frequently despite the very best of care will succumb to a meningitis or brain abscess. The very worst of these cases have been shown to follow swimming or diving and they have proved to be a dark chapter in the annals of rhinology.

Before dismissing the subject of acute sinusitis, I should like to say a few words about the patients who do not entirely recover. By that I mean those cases in which the acute symptoms subside and the patient returns to his usual vocation but still has symptoms. Usually these are termed subacute and are given less attention than they deserve. I should like to point out that it is just at this stage of the process that the patient needs the most careful attention the physician can possibly give him because this is the period when there is still a chance to bring about resolution and because if the case is neglected or carelessly handled the process is likely to become chronic. Indeed, I may safely say that many chronic cases are the result of inadequate care immediately following an acute attack. It is important at this stage to determine that the discharge has definitely ceased, that the airways have been properly established and that the sinuses are found to be clear on transillumination or x-ray. If local or consti-

tutional factors predisposing to sinus disease are found to be present they should be eliminated as soon as the patient's general condition will permit. If the process has not entirely cleared up the patient should continue to receive active treatment and if the sinuses still persist in appearing cloudy on transillumination or x-ray the patient should receive a moderate amount of x-ray therapy to induce resolution. Such treatment is the most effective after the sinuses have ceased to discharge or at least at the time when the discharge has taken on a mucoid character. Despite the pros and cons of x-ray therapy in connection with sinus disease, I am convinced that the procedure has definite merit in cases where there is a simple thickening of the mucous lining of the sinuses, provided the process has not reached the point where fibrosis, cystic degeneration or polyp formation has taken place. In addition the patient should receive the benefit of such medical care as the general indications call for.

We come now to a consideration of chronic sinusitis which is a long and complex subject. I will not attempt to cover it in any elaborate fashion but rather will epitomize the essentials as best I can. We can pass over the question of etiology rather lightly because much of what I have already said bears on that point. I should like to call attention to the rôle of allergy in sinusitis which up to this point has not been mentioned. It is indeed a perplexing problem because when we have allergy and infection combined it is difficult to say which came first or is the most important. Allergic tendencies may become manifest for the first time when a patient is suffering from a prolonged siege of sinus trouble, and vice versa, the presence of active allergic phenomena in the nose will predispose the patient to infection. It is important therefore, in all chronic cases to follow Hansel's advice and make a smear of the patient's nasal secretions to determine the presence of eosinophiles and their relative number compared to the neutrophils. A careful history should disclose either hereditary predisposition or former manifestations of various allergic stigmata. In case of doubt or suspicion the proper skin tests should be done. The importance of the rôle of allergy in chronic sinusitis may be appreciated by considering the results of Semenov's findings in the histologic examination of over one thousand specimens removed from the sinuses at operation. He reported that 17 per cent showed manifest evidences of allergy and that an additional 35 per cent showed equivocal evidence of allergic influence. Clinically when a definite history of allergy is lacking, one should always consider the possibility of it being present as a complicating factor, first,



if there is a history of recurring polypi; second, if the patient suffers exacerbations of his symptoms independently of changes of the weather; third, if the discharge at times becomes more watery than mucoid; and fourth, if the nasal mucous membrane appears paler than normal. If a diagnosis of sinusitis and allergy is made, I believe it is best that the allergy be pursued energetically before any surgery is undertaken. That does not mean that the sinus itself should be neglected. On the contrary, every effort should be made to maintain the airway, to keep the sinus cleared of waste material and to give the patient all the relief possible by means short of radical surgery. Such procedures as removal of polypi, submucous resection, sinus irrigation and intranasal antrostomy are permissible when indicated.

Assuming then that the allergy has been taken care of, or that we are dealing with a chronic case in which the question of allergy is out of the way, the problem before us then is how to proceed. Naturally that will depend on the extent of the sinus involvement and the general condition of the patient. Roughly speaking, chronic sinus disease is divided into two classes, the suppurative and the hyperplastic, although from the practical point of view we see both features in combination in many cases. It is at this point that the diagnostic skill and experience of the rhinologist come into play and I must admit that there are wide differences in the individual interpretations of given types of the condition on the part of men in different localities. Since the indications for treatment are based on the physician's analysis of the type and degree of pathology present, it is natural that the treatment prescribed should vary with the experience and judgment of the particular physician. This may perhaps sound bromidic since it applies to the treatment of all human ailments, yet I feel that in this particular field it is especially true because the diagnostic criteria are not as rigid as in some other branches of medicine and because we as physicians are governed in the treatment of our patients to a large degree by our inborn conservative or radical tendencies as the case may be. Then, too, I have noticed that certain men who develop a particular technic which is different have a tendency to be partial to that technic and employ it on occasions when other procedures are indicated.

Summarized briefly, we make our diagnosis of chronic sinus disease by the history, local findings and roentgenograms with or without contrast media. Considering the history, it is interesting to note that the subjective symptoms do not always parallel the findings nor does the patient's complaint always give one a clue to the extent of the

pathology. We have seen cases in which the patient's complaints were maximum and the findings minimum and on the other hand cases of extensive pathology causing disease in remote regions which were practically symptomless so that they could be truly termed occult. Between these extremes we have all sorts of combinations.

This much can be said about pain. In chronic cases we do not encounter severe pain such as is present in acute cases and when it is present it can be explained in several ways. It may mean a low-grade osteomyelitis; it may be the vacuum type of sinusitis; it may be the result of periodic obstruction due to extensive pathology or the patient may be neurotic. Osteomyelitis in chronic cases is uncommon and if it exists for any length of time, x-ray pictures should reveal the changes in the bone. Vacuum headache is so characteristic in its regular time of appearance and disappearance with intervals completely free that it is unmistakable. As for the neurotic patient, the absence of local findings should soon rule out involvement of the sinuses. Recurring headaches of various degrees are often encountered and need to be differentiated from headaches of other causes. I find, however, that headaches are not the outstanding symptom in my patients. Most of the patients I see come for the relief of nasal obstruction, recurring colds, postnasal discharge or are referred to me by the oculist, internist or pediatrician who is looking for a focus of infection. Since the neurotic type and the vacuum type are more or less readily eliminated we are left with the truly pathologic types that come to us for relief.

The diagnosis of hyperplastic or suppurative sinusitis is usually not a difficult matter provided the rhinologist is willing to take the time to study his patient. Whether subjective symptoms are few or many makes no difference. The chief reliance is placed on the objective findings. A thorough study of the local conditions within the nasal chambers, the status of the middle turbinate, the type of secretion present, the results of exploratory puncture or irrigation and the proper kind of x-ray pictures should enable any competent rhinologist to determine how advanced the pathology is and just what sinuses are involved. I consider the use of contrast media an invaluable adjunct in this study, particularly in the maxillary sinuses and seldom fail to employ it when there is a question as to the necessity of radical surgery. I have not been able to obtain as uniformly good results with the Proetz displacement method for the other sinuses as compared with the antrum for diagnostic purposes, and yet, I would not discourage its use whenever possible.

Assuming we have definitely determined that a state of chronic inflammation exists within one or more sinuses the question then arises as to how to proceed. In the first place, it is essential that contributing constitutional and environmental factors be eliminated. This no doubt sounds trite and superfluous but experience has demonstrated that the specialist has too often concentrated his attention on the local condition to the exclusion of the general factors, while on the other hand the medical man frequently overlooks the possibility of a sinus condition as the etiologic factor in some constitutional condition which he is treating. However, do not get the impression that I believe there is entire neglect along these lines. On the contrary, I have noted with great satisfaction increasing interest in the sinuses on the part of medical men, pediatricians, oculists and neurologists. We see many more cases of chronic cough, bronchiectasis, asthma, arthritis, optic neuritis and the like than formerly and in many instances have been able in collaboration with the medical man to trace the course of a chronic condition to pathology in the sinuses.

We are all becoming alert to the possibility of occult or symptomless sinusitis, a condition in which the patient is hardly aware of these structures but nevertheless on examination reveals evidences of chronic infection. Rhinologists must bear in mind that in this form of sinusitis where the symptoms and findings are often meager, it may take more than one examination to make the diagnosis. One may have to see the patient several times under varying conditions to be able finally to make up one's mind. Whenever possible planographic studies should be made in addition to the regular x-ray projection because they frequently reveal pathology which is missed in the conventional pictures. I have demonstrated pathology in the posterior ethmoids or sphenoid in cases of optic neuritis by this method, fully corroborating the work of Moore and Cone. Despite dissenting voices there is enough evidence at hand to prove that many cases of retrobulbar neuritis, uveitis, choroiditis, etc., are caused by sinus disease and can be cured by proper treatment. The same applies to chronic bronchitis, bronchiectasis and asthma. The important thing to bear in mind is that such connections have been proved many times and even though in a given case we may be disappointed in finding nothing wrong with the sinuses, that fact should not discourage us from at least giving the patient a chance by studying these structures thoroughly for possible pathology.

When it comes to actual therapeutic measures we have before us a wide array of procedures that is often bewildering. However, the matter is not

so complicated. We have to consider how sick the patient is, how urgent are his symptoms and how advanced is the pathology. Simple hyperplasia without purulent secretion or polyps will be benefited by measures which improve ventilation of the sinuses. That means submucous resection of the septum, cauterization or resection of the turbinates and x-ray therapy. I am opposed to the prolonged use of epinephrine solutions or long continued irrigations. In the end they tend to maintain the very condition for which they are being employed. Hyperplasia which fails to yield to ventilation and x-ray therapy, provided allergy and constitutional factors have been taken care of, will yield to nothing less than radical surgery. Of course many patients are relieved by going to a warm dry climate and remain symptomless as long as they stay there. Naturally this form of therapy is hardly available to the mass of patients we usually see.

Aside from the above measures there is very little to offer in the way of direct sinus therapy. Many men are wedded to various forms of physiotherapy or vaccine therapy, either local, oral or parenteral, with results which cannot be accurately tabulated for reasons that should be obvious. A whole chapter could be written on vaccine therapy without reaching any definite conclusion. For my own part, I must admit having been a fairly consistent user of a serobacterin over a period of years and have vacillated between optimism and pessimism from one season to another. It has, however, been my impression on the whole that the injections of a good serobacterin is of value in limiting the number and severity of colds, and in this respect should have some influence in preventing the further development of an existing pathologic process within a sinus. That means that in certain cases where the process has not advanced beyond the point where resolution is still possible, any therapeutic measure within reason is permissible provided it is given in conjunction with the other indicated measures and not prolonged beyond the point where its usefulness or ineffectiveness has been clearly demonstrated. This applies particularly to the matter of irrigations, the use of tampons and displacement therapy. These all have their place in the waning stages of acute and subacute cases and may even be given a limited trial in the chronic hyperplastic cases.

However, one must bear in mind that when all other factors have been eliminated and the patient's symptoms persist despite a course of adequate local treatment, it is folly to persist along these lines even though the patient through fear of an operation is satisfied to go along. I refer



particularly to the danger of the patient unconsciously becoming a cocaine addict. No one has ever taken the trouble to investigate this phase of the question but I am convinced from my own observation that there are a great many cocaine addicts among our patients who would be horrified if they knew the truth. It is inevitable that when a patient has had regular nasal treatments over a period of months and even years necessitating the use of cocaine in the nose at every sitting that he should develop a craving for the drug. I have heard patients say "When my nose gets the least bit stuffy, I go up to Dr. So-and-so and he puts something in my nose that makes me feel wonderful. I walk out of his office a new man."

The suppurative form of chronic sinusitis will yield to palliative treatment more often than the hyperplastic or polypoid type and when local treatment fails very often a less major operation is required than in the polypoid condition. However, when both types are seen in combination, particularly when associated with symptoms in other organs, nothing short of radical exenteration will bring about a recovery. We find that among the most thoughtful men in the specialty there is no real division of opinion as between conservative and radical surgery. All are agreed that when a sinus lining is so badly diseased that no natural force can restore it, one must remove it entirely. The real question is in the determination of when that stage of the process has been reached because we all agree that the mucous membrane has remarkable powers of resistance and is capable of recovering from considerable trauma if given a fair chance and some sensible help. It is a matter that cannot be reduced to formulae because of the numerous factors involved. The more closely we study and observe our patients and the better equipped we are to evaluate the findings, the more likely are we to be able to offer a plan for the cure of the trouble that is likely to be successful. What we need are less fads, less routine and more study of the individual.

Even the patients who are successfully operated upon require observation over an extended period of time because of the altered anatomic and physiologic situation which follows any extended procedure. My patients come in for observation after radical surgery for at least a year, not for treatment (unless it is indicated), but in order to impress on them the necessity of observing the precautions which are important in safeguarding the new tissues and the altered conditions, and to get them to develop the proper hygienic habits to prevent unpleasant sequelae and recurrences. Nobody living in our

larger centers is absolutely immune from colds and their sequelae and it is necessary to impress on our patients who have successfully undergone a sinus operation that they too can take cold and suffer its consequences.

Summing up these rambling remarks, we see that the treatment of sinusitis, particularly the chronic forms is not a matter of set rules and prescribed forms. It is rather a question of an adequate appraisal of the patients as a whole, a thorough understanding of the type and degree of the local process and the proper application of the fewest local measures which may be indicated to restore the normal. One must avoid the ultra-conservative as well as the ultra-radical point of view. When one has given conservative treatment a fair trial under the proper conditions and has failed and the patient's condition whether local or remote or both, calls for action, one must not hesitate to undertake the type of surgery which will offer the best chance of complete cure regardless of how radical it may seem to the patient. In fact the word "radical" itself had best be avoided and the term "complete" substituted as indicating more clearly the object of the procedure.

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25 East Washington Street

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## INDUSTRIAL OPHTHALMOLOGY\*

GILBERT C. STRUBLE, M.D., Ottumwa

The incidence of eye injuries in industry may run as high as ten per cent or over of all industrial injuries incurred. This figure naturally varies greatly in different types of work and in different districts. This high incidence of ocular injuries could be greatly lowered. Workmen must be impressed with the necessity to utilize the safeguards furnished him such as protective goggles, guards on machinery, etc., and much can be accomplished to prevent the spread of eye infections by constant efforts to maintain cleanliness in rest rooms, the use of clean towels and the prompt reporting to the foreman of fellow workers with red or sore eyes.

Most employers are now aware of the importance of early diagnosis and treatment of eye disorders and injuries by competent medical men, and the dangers incurred where well-meaning fellow employees attempt the removal of ocular foreign bodies or attempt to administer some form of first aid themselves. The use of shatter proof

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glass goggles containing the proper degree of tint to protect against the various injurious rays encountered in the daily work should be made compulsory. This is especially true where there is exposure to acid or alkali, flying chips and splinters, sparks, etc. The government has developed standard specifications for the different color shades of glasses which safely filter out the different wave lengths of injurious rays.

Ocular injuries in general consist of burns, foreign bodies, incised or lacerated wounds, punctures or only mild contusions. The handling of these injuries presents no essentially new problems and the care of such injuries is familiar to most of us or can be found described in detail in most good textbooks on the subject.

It is my desire in presenting this subject to give you something of practical value regarding a phase of industrial ophthalmology with which many of us are not familiar. It is worthwhile to review first those portions of the Iowa State Workmen's Compensation Laws which directly affect us as ophthalmologists caring for injured workmen protected by these laws. Many times we have workmen coming to us with eye injuries and the question in some of these cases is, "who will pay this bill?" Perhaps we have a patient who needs hospitalization at once for surgical or medical ocular care and yet we may hesitate to advise hospitalization because of the added expense incurred. For this reason it is well to understand that every employer, with a few exceptions which I will list in a moment, even though he may employ only one workman, is responsible for medical, surgical and hospital fees up to an amount not to exceed \$600.00 in any one case for injuries or accidents incurred by his employees. The employer is further responsible for compensation awards to that employee. This compensation is made on a basis of 60 per cent of the average weekly earnings but not to exceed \$15.00 or to be less than \$6.00 a week. Disability compensation begins on the fifteenth day of disability after the injury and compensation payments begin on the twenty-second day. Ignorance is not an excuse and it is assumed that the employer has elected to provide and pay compensation according to the provisions of the law. Medical fees considered excessive are subject to the approval of the Commissioner. In cases where the Commissioner wishes a report on a case he may appoint a duly qualified impartial physician to examine the employee. The fee for this service shall be \$5.00 but additional reasonable amounts and traveling expenses will be allowed when indicated. The employer also has other obligations. He must submit a written report of the accident to the Indus-

trial Commissioner and is further required to submit additional reports from time to time.

As stated above there are a few occupations not covered by the compensation laws. These are: agricultural workers, household or domestic servants, casual employment, and where it can be proved that intoxication or willful injury was a cause of the accident.

We should also know the employer's rights of examination. The law states that after an injury the workman, if requested by the employer, must submit himself for examination as often as may be reasonably requested to a physician without cost to the employee. If the workman requests he may at his own expense be entitled to have one or more physicians of his own selection present to participate in the examination. The refusal of the employee to submit to such examination deprives him of the right to any compensation for the period of the refusal. The employee has a certain responsibility as well. It is required that the injured party or someone in his behalf give notice of his injury to his foreman or employer within fifteen days of the occurrence of the injury.

Since it is obvious from the above that the employer is responsible in cases of disability and must pay compensation it is extremely important that the best refracted visual acuity of his employee is a matter of record on the company files. When one considers that approximately 20 to 30 per cent of all employables between the ages of eighteen and forty years have some degree of sub-normal acuity in at least one eye, which cannot be improved by treatment or by glasses, one is impressed with the possibility of unfair damage awards.

We have seen that the employer and the employee have certain rights and obligations under the law. What then of the physician and what are the rules of reasonableness as applied to the ophthalmologist? The law demands of those practicing ophthalmology special experience, knowledge and skill. There are certain aspects of the physician-patient relationship which must be understood and accepted. The physician is under no legal compulsion to accept anyone as a patient. His acceptance is entirely a matter of his own choosing. Once the relationship of physician and patient is begun, however, the physician cannot withdraw from the case without asking to be released and he must allow the patient sufficient time to secure another doctor. When seeking a release from a case, the physician should make sure it has been accepted and that another doctor has assumed care of the patient. The patient on the other hand has the legal right to discharge a doctor at any time and this is usually done orally.



The acceptance of the doctor's services is evidence of employment and once employed he must render proper service. The ophthalmologist can make this practical by keeping in mind "Brothers" recognized maxim, "Whatever a man ought to do the law supposes he has promised to do."

It is proper at this point to mention the subject of malpractice. By definition malpractice is the negligent performance by a physician or surgeon of the duties which are placed upon him by virtue of his relations with his patients. It is important for us to know that to sustain an action for malpractice the patient must prove the following facts: first, that the relationship of patient and physician existed; second, that the treatment was improper; and third, that the patient was injured by such treatment. We should remember that the physician is not liable for damages for injuries which are a result of an accident. Loss of vitreous or an expulsive hemorrhage during a cataract extraction might be classified as such.

One fact to be remembered in the handling of potential sympathetic ophthalmia cases is this. If the physician informs the patient that danger to the sound eye exists by keeping the injured eye, and the patient then elects to continue medical care and refuses or postpones enucleation of the affected or injured eye, the physician is not liable for damages if the sound eye does become affected. It is extremely wise in such cases to have a written record that the patient has been so informed and has refused enucleation of the affected eye. We should remember that a surgeon is guilty of assault and liable for damages if he operates without the consent of the patient. On the other hand when a patient fails to follow reasonable instruction given by his physician, as for example when he fails to return for treatment and thus sustains injury, he cannot hold the physician liable. In every case the burden of proof of negligence rests with the patient.

All of us are frequently called upon to treat eye injuries. In the handling of these cases we must remember that every one is a potential medicolegal case and see to it that on the first visit a careful and complete history is taken and the findings and history are entered on the chart. In general the following information is sufficient: the patient's name, by whom employed, age, time and place of injury, how it occurred, what it was that struck the eye, were witnesses present, and whether or not the accident has been reported. We should also note any history of previous injury, and by whom it was treated. At this time it is often helpful to ask the patient which is the best eye. By all means one should take and record

the visual acuity. This can be done even if the patient has a foreign body on the cornea or a minor abrasion or after emergency treatment has been instituted, but should be preceded by the instillation of a few drops of a suitable local anesthetic to relieve the pain and blepharospasm. In almost every case an accurate estimate of the acuity can be had at this time because the patient is not yet concerned with any medicolegal angles, no legal advice has been rendered and the patient's only concern is having the eye attended to.

In addition to the history, note should be made of the evidence of old injuries, corneal scars, vitreous opacities or retinal lesions, as well as what treatment was given and whether or not the eye was bandaged. It has been our practice always to bandage an eye which has an abrasion, ulcer or other solution of continuity of the cornea present, after first removing any foreign bodies present and instilling any needed medication to combat secondary iritis and to relieve pain. We insist on seeing these patients the following day when the instillation of fluorescein will demonstrate whether or not healing is complete. If the visual acuity is below normal a quick retinoscopy and manifest refraction will demonstrate whether, with correction, it comes up to normal. If it does not, the best refracted vision should be recorded. While this sounds as though it would require considerable time, in reality it can be done in a few minutes and for the average case is all that is required. In cases where some medicolegal question has arisen a more thorough and painstaking examination is necessary.

In addition to a careful history and examination we must include visual field studies, tests for diplopia using the industrial motor field chart and refraction and recording of the best near and distant visual acuity. An x-ray examination should be made where there is any question of the presence of an intra-ocular foreign body, especially in cases where we have a soft eye soon after injury even if no evidence of perforation is visible. It is much better to have a negative x-ray report than to be embarrassed later with a positive x-ray finding made at some one else's request. The ophthalmic examination should always be made with the pupils dilated so that one does not miss a peripheral lens lesion or retinal or choroidal lesion situated far out at the periphery. In all these cases we should make a diagnosis. When we are quite certain a visual loss is to be expected, it is wise to inform the insurance carrier of that fact, since many insurance companies set aside an insurance reserve at once in those cases where a loss is anticipated.

We have discussed some rules which should be followed in the handling of industrial eye injuries. We now come to another important factor, the determination of the visual disability. The necessity of determining degrees of visual disabilities is now a routine practice in ophthalmology. It is up to us to estimate the proportional loss of earning ability resulting from disease or injury to an eye. The question of compensation is left to the courts. Until the section on ophthalmology of the American Medical Association presented a standard method for evaluating visual disabilities there was no accepted standard. This method was accepted by the American Medical Association in May, 1926, after the committee had worked on it for six years. At the present time it has been adopted completely or with some modifications by many states. In recent correspondence with the Commissioner of the Iowa Workmen's Compensation Department at Des Moines, I was informed that the state of Iowa does not ordinarily compute visual loss with the use of glasses but that, "as a sort of compromise they oftentimes take the vision without glasses and the vision with glasses and then strike a mean average."

It is interesting to examine the rulings of other states on this matter. In thirteen states vision is computed without the use of corrective lenses; four states have a compromise version, among them Wisconsin. In all other states visual loss is computed with the use of lenses, and in nine states acuity tests are made both at twenty feet and at fourteen inches. Snell says, "Since the eye is rarely a perfect optical mechanism and because of the high frequency of congenital defects such as hyperopia and astigmatism and acquired defects such as myopia and presbyopia it would be unwise and unfair to make visual tests for compensation without the use of lenses. Further it has been estimated that 80 to 90 per cent of the adult working population have subnormal vision without the aid of glasses. If visual acuity is tested for both near and distant vision without the aid of glasses then every workman above the age of forty-seven years will have defective vision without ever having received an injury." Glasses should be looked upon as a protection. They have undoubtedly saved many eyes from injury. Certainly by routine eye examination and the prescription of proper lenses much can be done to prevent accidents, cut compensation costs and improve the quality of work done.

In case some of you are not familiar with the Iowa law on compensation for eye injuries, it reads as follows: "Weekly compensation for one hundred weeks is paid for the loss of one eye, or

for the loss of an eye, the other eye having been lost prior to the injury, weekly compensation for two hundred weeks." At the present time, the state of Iowa has no workable standard for the determination of partial visual loss. Especially is this true where such factors as diplopia and partial loss of the visual field enter the picture. Even the definition of the term industrial blindness is not made clear.

In an effort to clear up some of these points I was informed by the Commissioner's office on January 31, 1941, "In years past the use of the Snellen chart for determining visual efficiency has generally been accepted, but inasmuch as it is possible for other conditions than those disclosed by this chart to be encountered it is generally conceded that the Wisconsin method for determining the loss of vision is probably as efficient as any other." Since the Wisconsin method for determining loss of visual efficiency is apparently the one recommended by our own Commissioner's office, I will take the time to describe it briefly.

In most respects this law closely parallels the standard as accepted by the council on ophthalmology of the American Medical Association in 1926. It is an effort to arrive at the visual efficiency of the individual. It is worked out on the same assumption that there are three primary factors of vision; first, central acuity (near and distance); second, field of vision; and third, muscle function.

In Wisconsin a compromise version has been worked out regarding the testing of vision for compensation purposes with lenses. The central visual acuity is measured both for near and distance, each eye being measured separately both with and without correction, the term *with correction* measuring the best refracted vision obtainable, and the term *without correction* being the term used to denote the visual acuity taken without new correction but with the presbyopic correction for age and other correction for conditions not due to the injury. The central visual acuity efficiency of the eye for distance vision is based on the best central vision obtainable with correction less one-half the difference between the central acuity with and without correction. However, in no case shall such subtraction for glasses be more than 25 per cent or less than 5 per cent of total central visual efficiency.

In the Wisconsin law, as in the American Medical Association standard, a one-fold value is assigned to the distance vision and a two-fold value to the near vision. The reason is obvious, since this is a law to compensate a man for reduced earning power. In most occupations the eyes are



used more for near work than for distant work. Therefore, if a patient had a distance visual efficiency of 65 per cent and a near acuity of 84 per cent the complete central visual efficiency of the eye equals 65 per cent plus 84 per cent plus 84 per cent. This sum is 233 per cent which divided by three is 77.7 per cent.

A visual field having an area which extends from the point of fixation outward 65 degrees, down and out 65 degrees, down 55 degrees, down and in 45 degrees, inward 45 degrees, in and up 45 degrees, upward 45 degrees, and up and out 55 degrees, is accepted as 100 per cent industrial visual field efficiency. The percentage of visual field efficiency is determined by adding the sums of the eight principal meridians and dividing by 420 the sum of the eight meridians of the normal industrial field. For example if the sum of the eight principal meridians is 350 we divide that figure by 420 and the result is 83.3 per cent for the field of vision. In testing we use a white target which subtends a one degree angle under illumination of not less than three foot candles. This method for determining the percentage of field of vision is identical with the American Medical Association standard.

Binocular vision is measured in all parts of the motor field, recognized methods being used for testing. Diplopia may involve a part or the whole of the field. When diplopia is present it is plotted on the industrial motor field chart. This chart is divided into twenty rectangles four by five degrees in size. When diplopia involves the entire motor field the loss of coordinate visual efficiency is equal to 50 per cent of the vision existing in one eye. When the diplopia is partial the loss is proportional and based on an efficiency factor table. For example if diplopia is found in three rectangles the motor field efficiency is 96.3 per cent. The percentage loss of motor field efficiency as here set forth is much lower than in the American Medical Association standard which figures the presence of diplopia in all twenty squares (diplopia in all directions of gaze) as equivalent to 100 per cent, while the highest percentage here is figured at 50 per cent.

Industrial visual efficiency of one eye is determined by multiplying the computed efficiency values of central visual acuity, field of vision and of binocular vision. Thus if central visual acuity is 77.7 per cent, the field of vision 83.3 per cent, and the motor field efficiency, 96.3 per cent, the industrial visual efficiency is 62.3 per cent, or the impairment of one eye for industrial use is 37.7 per cent.

In the state of Wisconsin for total impairment

of one eye for industrial use the injured employee receives compensation for two hundred and fifty weeks if the employee is fifty years of age or less. This would give us 250 times 37.7 per cent or 94.25 weeks during which time he would be drawing compensation. In the state of Iowa the injured employee receives compensation for one hundred weeks for the loss of an eye; this would be 100 times 37.7 per cent or a weekly compensation for 37.7 weeks for such a disability. Let us assume the injured employee had been drawing \$20.00 per week prior to injury. Since 60 per cent of \$20.00 is \$12.00, our injured employee in question would then draw \$12.00 a week for 37.7 weeks for his disability.

I wish to emphasize that this paper finds no fault with the offices of the Industrial Commissioner. The Commissioner in handling eye compensation cases in this state carries out the letter of the law fairly and impartially. I do think, however, that the state of Iowa should adopt a modern up-to-date standard of its own for the determination of industrial visual efficiency, based on the three primary factors of vision; namely, central acuity, field of vision and muscle function. We as ophthalmologists in Iowa should work toward that goal and cooperate with the Compensation Commissioner in drawing up such a standard.

#### SUMMARY

1. Certain aspects of the handling of eye injury cases have been discussed. Especially is the maintenance of good records to be stressed.

2. The obligations of the employer, employee, and the physician under the State Workmen's Compensation Law of Iowa are briefly set forth, and some important points emphasized which may protect the industrial ophthalmologist from suits for malpractice.

3. The method of determining industrial visual efficiency under the laws of Wisconsin is presented, and the present Iowa law on compensation awards for eye disabilities is reviewed. Your attention is called to the need for an up-to-date standard of our own.

#### Discussion

Dr. W. H. Foster, Clinton: Certainly a few words of commendation are not out of order at this time. Dr. Struble has studiously sought out and given us valuable and practical points dealing in a very concise manner with the main aspects of industrial ophthalmology. I feel that there is no need to attempt to add or detract from his presentation of the medicolegal aspects of industrial accidents to the eyes. This also applies to Dr. Struble's dis-

cussion of determining the degree of visual damage, and its compensation. We are all very conscious of the need for a less ambiguous Iowa code regarding industrial compensation. This is especially true of those of us who live near the state boundary lines, where we have some contact with cases affected by the laws of other states. For example, while Iowa and Wisconsin are very similar, the state of Illinois is somewhat different in a good many respects, both as to the manner of arriving at the percentage of loss of visual efficiency and as to the awards pertaining thereunto. I sincerely feel that this is a very valuable article, and hope that the following discussors will bring out in detail different parts of this subject.

I wish to say a few words about the cornea in industrial ophthalmology, and I wish to confine my remarks more especially to the most common ocular accident in industry; that is, small foreign bodies lodged in the cornea. Their importance lies largely in the fact that they constitute a very great majority of industrial ocular accidents. The large majority of this class of accidents cause little trouble, past one or two days. However, it seems to me that the following precautions should be emphasized in the handling of these cases:

1. As has been mentioned by Dr. Struble, the visual acuity should be determined in all cases, on the patient's first office visit.

2. It should be remembered that some eyes seem to develop an iritis on the slightest provocation, while on the other hand, the eyes of some individuals will stand a comparatively great amount of abuse and heal promptly without much inflammation.

3. A minutely careful removal of the foreign body, and a very thorough curettage or removal of the scar and damaged cornea about it, should be done.

4. Secondary infection of the corneal wound should be prevented. If there is conjunctivitis, blepharitis, or dacryocystitis present and, if the wound has been large or deep or near the center of the cornea, then the danger of corneal ulceration is greater. In such a condition, I do not feel it wise to close the eye by using an eyepad. Rather we should leave it open and depend on frequent irrigations, hot compresses, midriasis, local anesthetics, proper antiseptics and foreign protein injections for one or two days. These things can best control the danger of infection, and make the patient more comfortable. If, however, we feel that the danger of infection is negligible, then it is the practice in my office to dress the eye with an eyepad, after using an anesthetic and antiseptic ointment.

Judgment, developed by experience, should be used in each individual case. All of these small foreign bodies in the cornea should be treated as a potentially serious condition until proved otherwise.

## THE TREATMENT OF PNEUMONIA\*

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For the past two years, the Advisory Committee on Pneumonia Control of the Iowa State Department of Health has issued a booklet on the diagnosis and treatment of pneumococcus pneumonia. These booklets have presented in condensed, but quite complete, form the essential current information on the subject. Since the second number was issued only a few months ago, all the information contained in it will not be repeated here, but certain points will be emphasized at the risk of incoherence and important omissions.

It is impossible to consider the treatment of pneumonia without first discussing the diagnosis. The latter must be two-fold: clinical and bacteriologic. Neither alone is adequate for good treatment. The practice of placing "suspected" or "threatened" pneumonia cases on sulfapyridine or sulfathiazole, without establishing a reasonably definite clinical diagnosis and carrying out bacteriologic studies on the sputum and blood, is to be deprecated in the strongest possible terms. At any given moment, a patient either has pneumonia or does not have it. Granted that it may be difficult to be sure at any given moment whether or not pneumonia actually is present, careful consideration of the history, painstaking physical examination, repeated at frequent intervals to note progressive changes, gross inspection of the sputum, the leukocyte count, total and differential, and, in some cases, x-ray examination of the chest, will make the clinical diagnosis certain. There is no excuse for hasty administration of sulfonamide drugs in acute bronchitis, pulmonary embolism, massive pulmonary collapse or pleurisy with effusion. There is ample time, at the onset of an acute illness suspected of being an early pneumonia, to make a reasonably certain clinical diagnosis before administering one of these drugs. In pneumonias with a typical acute onset, with a chill, pleuritic pain, high fever, cough, bloody or rusty sputum, it is unnecessary to wait until signs of consolidation have developed. However, limitation of movement of the affected side, suppressed breath sounds, and, usually a few crepitations, will be found. On the other hand, in many bronchopneumonias, in traumatic and postoperative cases, in patients with chronic diseases, and in elderly persons, the onset may be gradual or masked by co-existent circumstances. In such instances, repeated examinations of the chest for crepitant râles, broncho-

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vesicular breathing, patchy areas of dulness or dulness of one or more lobes, and, often, x-ray examination, may be necessary to confirm the suspicion of pneumonia. Atelectatic râles, so often heard along the lung margins and at the base of the dependent lung when the patient lies on his side, must not be mistaken for the crepitant râles due to inflammatory changes. When in doubt, the patient should be turned on the opposite side; the râles, if atelectatic, will quickly clear; if they are inflammatory in origin, they will persist or become more pronounced.

After having made a clinical diagnosis of pneumonia, lobar or bronchial, it is essential to good treatment that a bacteriologic diagnosis be made, if possible. By "if possible", I do not mean "if convenient". If sputum is obtainable, it should be typed, and blood should be drawn for culture. If pneumococci are not found, other organisms should be looked for by smear and culture. The mouse test, if available, is extremely valuable. If one specimen is unsatisfactory, another should be examined as soon as possible. If no sputum is coughed up, obviously it cannot be typed, but, often, if he is urged, the patient can bring up enough for examination; if not, a little may be obtained by quickly swabbing the throat as the patient gags. Saliva will not do. In every case, the effort must be made to obtain the best available specimen for typing. I am sure that hundreds of cases of pneumonia were treated in Iowa during the past season without benefit of sputum typing, not because it was impossible, but because it was inconvenient. The same is true of the taking of blood cultures. Every physician who treats pneumonia should have in his bag at all times several wide-mouthed sputum bottles, and several blood culture outfits. These are both obtainable, on request, at all typing stations and from the State Department of Health. If sputum is not readily obtained during the physician's visit, the bottle may be left, and the specimen taken to the nearest typing station by a relative or friend. In my experience there are always plenty of relatives and friends underfoot in country homes, who can perform this important errand, thus saving the doctor's time. The next day, if it is decided to use type-specific serum, the same or another messenger can be dispatched to get it in time for the doctor's next visit. I do not consider that the inconveniences of rural practice are an excuse for the failure to make a bacteriologic diagnosis. It is only necessary to be prepared for it and to make use of the facilities provided by the State Department of Health.

Why is the bacteriologic diagnosis so important? Why is it not enough to give sulfapyridine

or sulfathiazole, since, in most cases of pneumococcus pneumonia, a satisfactory response will be obtained with drug treatment alone? There are at least three very good reasons. First, many pneumonias, both lobar and bronchial, are not caused by the pneumococcus, but by the *Streptococcus haemolyticus*, *Staphylococcus aureus*, the *Friedländer bacillus*, the *influenza bacillus* and by viruses. There is evidence that virus pneumonias have become increasingly prevalent in recent years. It is important, therefore, that the drug most effective against the causative organism be used, or, if none will be effective, that none be used, so that the patient will not be subjected unnecessarily to the risk of toxic effects of the drug. Second, if a satisfactory response to a sulfonamide drug is not obtained within twenty-four to thirty-six hours, type-specific serum should be used in addition to the drug. If a pneumococcus is the causative organism, but the type is not known, serum cannot be given, and the patient is deprived of this advantage. By the time the need for serum is known, the bacteriostatic action of the drug on the organisms will have reduced their numbers so as to make typing difficult or impossible. In any case, valuable time will be lost in delayed typing. Third, under either of two circumstances to be mentioned later, which can be determined only by sputum typing and blood culture, combined treatment with drug and serum results in a lower mortality rate than with the drug alone. For these reasons, it is essential to make every effort to determine the type of pneumococcus present, if any, and the presence or absence of bacteremia at the earliest possible moment.

As soon as a clinical diagnosis of pneumonia has been made, and sputum and blood cultures obtained, active treatment is started. We have available four effective weapons, general care, oxygen, type-specific serum and the sulfonamide drugs.

The introduction of new therapeutic agents has not removed the need for good general care. It must be decided early whether a patient will be sent to a hospital or cared for at home. Most cases should be hospitalized, since laboratory and x-ray facilities, parenteral fluids and possibly surgical facilities will be needed. Exceptionally, all of these except x-ray may be made available in the home. A patient should not be treated half-heartedly at home, then brought to the hospital when moribund. Wherever he is treated, he should be made as comfortable as possible by proper attention to the bed, ventilation and lighting. Good nursing has been the deciding factor in the outcome of many cases. The care must

be planned so as to provide ample time for sleep and rest. An over-zealous nurse may annoy and tire a patient by fussy, too frequent attention. For the early pleuritic pain, codeine or morphine should be used as needed to make it tolerable. Adhesive strapping and chest binders reduce vital capacity, obstruct examination and are ineffectual. Morphine almost never should be used late in the disease because of respiratory depression. A minimum of the mildest effective sedatives should be used; the barbiturates are particularly likely to contribute to the appearance of toxic delirium. At least 3,000 cubic centimeters of total fluids should be given daily by mouth or otherwise. The diet includes fruit juices, milk, gelatin, custard, crackers, ice cream, soft eggs, gruels and vegetable purees. The bowels ordinarily can be regulated by simple lubricants and enemas. Abdominal distention should be controlled early if possible, since it is difficult to reverse, once it is pronounced. It reduces the vital capacity, increases dyspnea and cyanosis, and interferes with comfortable rest. The rectal tube, enemas, stupes and sometimes prostigmin and pitressin, are usually effective. If the infection and toxemia are overcome, there will be little or no distention; if distention is refractory, the prognosis is grave, not because of the distention itself, but because it indicates that the infection is not under control.

The physiologic tachycardia of pneumonia is not an indication for digitalis. A patient with a pre-existing valvular lesion which interferes with cardiac function should be digitalized early and kept on a maintenance ration of the drug. Care must be taken to avoid toxicity; the heart rate is not a dependable guide; it is safer to follow Eggleston's rule. Rapid auricular fibrillation is the only other absolute indication for the use of digitalis. Sinus tachycardia and premature beats are not indications. Circulatory failure is nearly always peripheral, not central, one exception being cardiac tamponade due to pericarditis. Peripheral circulatory failure is not likely to occur if the infection is controlled by drugs, serum or both, and if the blood volume is maintained by adequate fluid intake. If it occurs, intravenous glucose, blood or plasma are indicated. Epinephrine, caffeine and other stimulants are of very limited value.

Oxygen therapy may be a decisive factor in the treatment of pneumonia. It is unfortunate that it is so expensive, for it should be used more often than it is. While anoxemia may possibly exist in the absence of cyanosis, the most practical indication for the administration of oxygen is cyanosis. Theoretically, every patient who presents it should receive oxygen until he demon-

strates that he will remain cyanosis-free when it is withdrawn. Actually, since the introduction of serum and drug treatment, lesser grades of cyanosis may be tolerated early in the disease in anticipation of probable spontaneous clearing when the disease is brought under control by drug, serum, or both. However, if the response to specific treatment is not prompt, or if cyanosis persists, oxygen is indicated, since anoxemia tends to precipitate peripheral vascular collapse, increases dyspnea and abdominal distention, and handicaps the heart, kidneys and the respiratory center. Oxygen may be given satisfactorily either by nasal catheter or by the use of an oxygen tent. The rate is determined by the needs of the individual patient, usually three to six or more liters per minute. The cyanosis which may result from sulfonamide drugs may be confusing; it may be difficult to estimate how much is due to anoxemia and methemoglobinemia respectively. Since anoxemia is much more likely to produce dyspnea than methemoglobinemia, the rate and depth of respiration may be used as a guide.

Since rabbits, in addition to horses, have been used to study the immune response to pneumococci, some thirty types of these organisms are identifiable in addition to the three which lead to antibody formation in the horse. This fact makes available for therapeutic use in human pneumonia, type-specific immune serum for each of these known types of pneumococcus infection. The introduction of sulfonamide drugs has by no means rendered serum treatment obsolete, since the two agents act in entirely different ways. Type-specific serum lends immune substances to the patient for his temporary use, before he has had time to produce similar substances himself. These immune substances neutralize the specific toxic carbohydrate in the pneumococcus capsule, and also exert a bactericidal effect; the action of the sulfonamides is essentially that of bacteriostasis. Therefore, the two agents are complementary, and not mutually exclusive.

Serum alone should be used in all patients who are known ever to have shown serious toxic reactions to any of the sulfonamide group of drugs, such as granulopenia, hemolytic anemia, toxic hepatitis or severe dermatitis. If serum alone is used, the initial dosage in the average case should be 40,000 to 50,000 units. If a satisfactory response is not obtained within eight to twelve hours, the dose should be repeated. The dose should be doubled under the following conditions:

1. When the blood culture is positive.
2. When the pneumococcus is either Type II or III.



3. When the patient is pregnant or in the first week of the puerperium.
4. When the patient is over fifty years of age.
5. When more than one lobe is involved.
6. When the patient is an alcoholic individual.
7. When the treatment is started after the third day of the illness.
8. When the serum is given intramuscularly.

If the expected favorable response is not obtained, the sputum should be re-typed, since more than one type of pneumococcus may be present or the organism originally found may have come from the upper respiratory tract, not the lungs, and may not, therefore, necessarily be the cause of the pneumonia. In addition, the blood culture should be repeated and complications sought which might account for persistence of fever and toxemia. It is futile to continue to give further serum after a reasonable dosage has been used. The precautions against serum reactions should, of course, always be enforced.

The bacteriostatic action of the sulfonamide drugs on pneumococci and other bacteria is now firmly established. In streptococcus pneumonia, sulfanilamide should be used, as in other infections by that organism. Sulfathiazole has proved to be much more effective against the staphylococcus than sulfapyridine and should be used in pneumonias due to that organism. In pneumococcus pneumonia, sulfapyridine, sulfathiazole and recently, sulfadiazine have proved much more effective than sulfanilamide. In general, sulfapyridine and sulfathiazole seem to be about equally effective. The most important differences between them are as follows:

1. Sulfathiazole causes less nausea and vomiting.
2. Sulfathiazole causes a somewhat slower fall in temperature.
3. Absorption and excretion of sulfathiazole are more rapid.
4. The initial dose of sulfathiazole should be larger.
5. Acetylation occurs to less degree with sulfathiazole, so that it may be disregarded for practical purposes.
6. A blood level of 2.5 to 6.0 milligrams per cent is usually sufficient to produce a satisfactory response, while with sulfapyridine it should be somewhat higher.
7. Precipitation of sulfathiazole in the urinary tract seems to depend primarily on its concentration in the urine, and occurs chiefly in the collecting tubules, whereas sulfapyridine is precipitated

chiefly in the acetylated form, in the calices, pelvis, ureters and bladder, and is less likely to be precipitated in an alkaline than in an acid urine.

8. Early reports indicated that sulfathiazole does not diffuse into the cerebrospinal fluid as readily as sulfapyridine, and that it was, therefore, not likely to be effective in pneumococcus meningitis. At least one recent report, however, tends to refute this. The question is still unsettled.

9. Toxic reactions involving the blood seem less frequent with sulfathiazole, but toxic skin reactions are a little more frequent.

While experience with sulfadiazine is as yet limited, a recent report indicates that it lowers the mortality rate more effectively than sulfathiazole, tends to lower the temperature somewhat more rapidly, is about equal in toxicity, produces a higher concentration of free drug in the blood with equivalent dosage, and does not undergo acetylation to as great a degree. It would appear, then, if this report is substantiated, that sulfadiazine may become the drug of choice.

Sulfamethylthiazole has proved so toxic that it has practically fallen into disuse. Additional sulfonamide compounds may in the future prove themselves superior in various respects to those now under consideration.

The drug chosen for a case of pneumonia on the basis of the above characteristics should be started as soon as the clinical diagnosis is made. The initial dose of sulfapyridine should be 2.0 grams; that of sulfathiazole, 3.0 grams; that of sulfadiazine, 3.0 grams, repeated in four hours. After the initial dose of sulfapyridine or sulfathiazole, and after the two initial doses of sulfadiazine, 1.0 gram of whichever drug is being used is given every four hours, day and night, until the temperature has been normal for forty-eight hours, unless signs of toxicity appear. Blood level determinations are helpful, but not essential. In case of persistent vomiting or extreme urgency, the sodium salt of any of these drugs may be given intravenously, in five per cent solution, in dosage of .06 of a gram per kilogram of body weight. It may be repeated in twenty-four hours or supplemented by oral treatment. Red and white blood cell counts should be done at least every second day, and the urine examined daily, for evidence of hemolytic anemia, granulopenia and hematuria, and the drug stopped if such occur. Oliguria and azotemia justify lavage of the upper urinary tract with warm water to remove obstructing drug crystals. Toxic dermatitis or true drug fever are also indica-

tions for discontinuance of the drug. Before making the latter diagnosis, complications must be carefully ruled out as a cause of the fever. These include empyema, pericarditis, phlebitis, otitis media, sinusitis and meningitis. Reinfection with a new organism must also be excluded. True relapses are infrequent. In appraising the chest findings, one must bear in mind that evidences of consolidation persist for several days after the temperature reaches normal.

Finally, assuming that neither serum nor the sulfonamide drugs are contraindicated, both agents should be used under the following conditions:

1. When the first impression is that the patient has an infection of more than average severity.
2. When the blood culture is positive.
3. When the patient is over fifty years of age.
4. When more than one lobe is involved.
5. When a satisfactory response has not resulted within twenty-four hours to the drug alone.

When used in combination, the dosage of drug and serum is less than when either is used alone. The results are definitely better. Routine preliminary sputum typing and blood culture are prerequisites to its use.

The conscientious and skillful use of the four great weapons against pneumonia, general care, oxygen, type-specific serum and the sulfonamide drugs, especially the combined use of drug and serum in the more severe cases, gives us the opportunity to reduce the mortality rate of this disease to new low levels. Let us put these weapons to the fullest use in every part of Iowa.

#### Discussion

**Dr. Clarence P. Phillips, Muscatine:** We are indebted to Dr. Wolverton for a most excellent presentation of a paper on this important subject.

I wish to emphasize the importance of the typing of pneumonias. It is true that typing is a difficult thing in some, especially babies or very young individuals, or those without a productive cough. The attempt, of course, should always be made. There are those who are stampeded into early treatment because the individual is so ill that they do not wish to wait for the typing, but the typing can be taken and the drug started immediately after, if the sputum will yield to proper typing. In any event, typing should be attempted. Blood cultures, of course, should always be taken. As Dr. Wolverton brought out, organisms other than the pneumococcus are often to blame, and the specific type of medication for the individual case depends, to a great extent, on the results of that blood culture. Above all, an exact diagnosis should be made, whether a person comes in with an embolus,

with massive collapse, or with other conditions which may simulate pneumonia.

I have been struck by the economic value of the present treatment. A person with pneumonia used to be in the hospital anywhere from two to three weeks. Now that period has been cut to less than a week, or at least to around a week's time, especially in the younger individuals. The figures used to show a mortality rate between 30 and 40 per cent. More recent figures show a mortality rate somewhere in the neighborhood of eight per cent, which is a considerable reduction for the short length of time this specific medication has been in use.

Work done in Chicago, New York or elsewhere is of great academic interest, but that which we ourselves or our associates are doing in our own communities is more interesting to me. Through the cooperation of the two hospitals in my community I was able to summarize the treatment of pneumonia as based on the hospitalized cases. This was only a small series, 66 cases from May 1, 1940 to May 1, 1941, but to me those 66 cases yielded more information than I could get from reading statistics of larger communities.

The age group was 30 under ten years of age and 36 over ten years of age. The typing was only completed in ten of the 66 cases. This is a very poor percentage, I will admit. I talked to the technicians. They assured me that this figure by no means represented attempts made, that it represented the complete typing. Typing was attempted on practically all patients, but they had very bad response to their typing in many cases, or many of those were in babies or very young children, so that the typing was incomplete. Thirty were classified as lobar, 19 as bronchial and 17 were unclassified on the charts.

Medication was as follows: 21 received sulfapyridine, 45 received sulfathiazole, and four received serum as well as sulfapyridine or sulfathiazole. The duration of fever varied. One institution had a higher percentage of the younger individuals. The other had a higher percentage of older individuals. The one who had the larger percentage of the older individuals had a slightly higher incidence of complications. The average duration of fever for the whole group was only 90.4 hours. For those who had no complications, it was only 55.4, but the complications themselves, cases of empyema, and so forth, raised the average. The average length of hospitalization in the one group without complications was only 5.7 days. This was in the hospital that had more of the younger individuals. The average length of hospitalization for the other group was only 9.8 days. The average white blood count for the whole was 18,185 on admission to the hospital. There were twenty-one who had positive blood cultures in the group, and there was only one death; that was an individual who died within two hours after admission to the hospital. I have no apologies to make.



I have heard it said that pneumonia is a disease of very short duration. Often in the past it was a disease of very short duration but how tragically short it was in too many cases. How many of us would like to be able to treat our friends who died the tragic death of a fast developing pneumonia, at the present time, with modern methods of treatment?

## METRAZOL CONVULSIVE THERAPY OF MENTAL DISEASE

I. ZIFERSTEIN, M.D., Mt. Pleasant

Since the introduction of metrazol convulsive therapy, a voluminous literature has accumulated on the subject. In spite of this, the place of metrazol in the therapeutic armamentarium of the psychiatrist has not yet been definitely established. It is the writer's hope that the following report on the use of metrazol at the Mt. Pleasant State Hospital will contribute in some measure to an eventual evaluation of the effectiveness of this type of treatment and the types of mental disease most amenable to it.

Much has been written, and in considerable detail, about the technic, dosage, etc., and a recapitulation in this article is deemed unnecessary, except to state that the initial dose was usually four cubic centimeters of a ten per cent solution of metrazol. If a convulsion did not result, or if the convulsion was incomplete, the injection was repeated within fifteen to thirty minutes, increasing the dose by 0.5 of a cubic centimeter. Most patients showed a progressive increase in tolerance to the drug, so that the dose had to be increased from time to time. One particularly tolerant patient required a dose of 17.3 cubic centimeters at the conclusion of the course of treatment, but the maximum dose was usually about seven to nine cubic centimeters. Treatment was continued until the patient recovered, or until it was felt that no further improvement was being obtained from continuation of treatment. In no case was the patient given more than thirty treatments.

During the period covered in this report (June, 1939, to April, 1941) a total of 75 patients have been treated in the women's division of the Mt. Pleasant State Hospital, and treatment has been completed in 64. The following table presents a summary of the results obtained, with the response to treatment being classified as follows:

*Complete remission*—Return to the prepsychotic status and a normal adjustment outside the hospital. (In fact, in several cases follow-up reports are that the patient is "better than ever," i.e., the personality is more adequate, adjustment

is better and interests are broader than they were before the onset of the mental illness).

*Social remission*—The patient is adjusting satisfactorily outside the hospital, but is showing some minor defects, e.g., occasional restlessness, "nervousness", irritability, slight depression.

*Improved*—The patient is making a better hospital adjustment, but is not well enough to adjust outside the hospital.

*Unimproved*—The patient has shown no change in mental status.

Type of Mental Disease	Number of Cases	Complete Remission	Social Remission	Improved	Unimproved
Involuntional Melancholia (Less than 2 years' duration)	11	10	1	..	..
Involuntional Melancholia (More than 2 years' duration)	11	1	3	3	4
Manic—Depressive—Depressed (Less than 2 years' duration)	8	5	1	2	..
Manic—Depressive—Depressed (More than 2 years' duration)	3	1	..	1	1
Schizophrenia (Less than 6 months' duration)	6	3	1	2	..
Schizophrenia (More than 6 months' duration)	16	1	..	2	13
Psychoneurosis	4	1	2	..	1
Involuntional Psychosis—Paranoid Type	3	1	..	..	2
Paranoid Condition	1	..	..	..	1
Undiagnosed	1	..	..	..	1
TOTALS	64	23	8	10	23

It will be noted that the results are much better in involuntional melancholia (remission rate, 68 per cent) and in manic depressive psychosis (remission rate, 64 per cent) than in schizophrenia (remission rate, 23 per cent). It is interesting to note that the four cases of involuntional melancholia that are listed as unimproved, all showed improvement while under treatment, but relapsed either while still under treatment or after the termination of treatment. The same was true of the one psychoneurotic and the one manic depressive that are listed as unimproved. In other words, all the involuntional melancholias, manic depressives, and psychoneurotics responded to treatment, but in some the response was transitory.

In all types of cases, the duration of illness before institution of treatment was of major importance in determining the prognosis. Thus, in eleven cases of involuntional melancholia, of less than two years' duration, remission was obtained in eleven or 100 per cent, but eleven cases that were of more than two years' duration showed only four remissions, three improved and four unimproved. In the case of schizophrenia, in sixteen cases of more than six months' duration only

one remission was obtained; two were improved and thirteen unimproved. There were only six cases of schizophrenia of less than six months' duration. Here there were four remissions and two improved. The duration of illness was also a factor in the number of treatments required to produce a remission. Thus, in the twenty-four cases of less than two years' duration that recovered, the average number of treatments was ten; whereas in the seven cases of more than two years' duration that recovered, the average number of treatments was eighteen.

With one exception, all patients who recovered or showed marked improvement began to show evidence of improvement by the end of the first six convulsions. Most of the patients showed the first signs of improvement between the second and fourth convulsions; a few after the fifth or sixth. The one exception was a case of involutional melancholia of three years' duration, with well fixed delusional ideas, who showed no significant change until the fourteenth treatment, and then proceeded to a social remission.

It is our policy to keep patients in the hospital under observation for one month after termination of treatment before paroling them. After they are paroled, we maintain contact with them by obtaining follow-up reports from the relatives. We have received such reports on all but three of our paroled patients. All of the recovered patients have maintained their remissions since leaving the hospital, with the exception of one involutional melancholia who relapsed two months after leaving the hospital, recovered on a second course of treatment, and has remained well for the past four months.

A major objection which has been advanced against metrazol is the severity of the convulsion, with resulting traumatic complications. In our series of cases the following complications were encountered: four patients lost teeth from biting down on the mouth gag during the convulsion; two dislocations of the lower jaw; one tear of the deltoid muscle; one fractured metacarpal sustained during the postconvulsive excitement; one fracture-dislocation of the shoulder; one dislocation of the shoulder; one thrombophlebitis at the site of injection of metrazol; and one fracture of the fifth and sixth thoracic vertebrae.

It is possible that we have overlooked some vertebral fractures, since we did not take routine x-rays of the spine before and after the course of metrazol treatments. However, we did take x-rays in all cases where patients complained of back pain. In addition, in the follow-up reports of two patients there is mention of backache, pain in the neck and "neuritis". These com-

plaints were not present while the patients were in the hospital and we do not know whether or not they are related to the treatments.

Since January, 1941, we have been using curare to soften the convulsions in all our metrazol cases. We have given 230 treatments without any traumatic complications. We feel that the use of curare should obviate some of the principal objections concerning the drastic nature of metrazol convulsive therapy.

#### COMMENT

It is becoming increasingly clear that the field of greatest usefulness of convulsive therapy is in the affective psychoses, and more especially involutional melancholia. The prognosis in involutional melancholia without "specific" treatment is poor, a recent study of 300 cases over a twenty-five-year period at the Pennsylvania Hospital showing a recovery rate of only 30 per cent.<sup>1</sup> The use of metrazol in this condition is, therefore, amply justified by the results obtained. The results in chronic schizophrenia are very discouraging. Reports appearing in the literature indicate that insulin is much more effective than metrazol in the treatment of schizophrenia.<sup>2</sup> However, the good results obtained in our small series of early schizophrenia would indicate that, where insulin therapy is not available because of limited personnel or budget, the patient with an early schizophrenia should be given the benefit of a course of metrazol treatments.

It has been reported that metrazol tends to destroy recently acquired impressions and patterns of behavior and it has been suggested that this may be its mode of action in the treatment of mental disease.<sup>3</sup> This hypothesis may account for the lesser effectiveness of metrazol in cases of long duration and the larger number of treatments required to produce a remission in those chronic cases that do respond. In other words, in the cases of long duration the psychosis is no longer a recently acquired pattern of behavior and it is, therefore, difficult or impossible to obliterate it by shock therapy.

Metrazol convulsive therapy, like all other forms of treatment, is most effective when applied early in the course of mental disease. Unfortunately, early hospitalization for mental disease is the exception rather than the rule, as may be seen from the fact that our series includes only six cases of schizophrenia of less than six months' duration. Usually, the patient is brought to a state hospital only after all efforts of the family to treat him outside the hospital have failed. It is to be hoped that a dissemination of the facts concerning shock therapy among the members of the medical profession will remedy this situation.



## SUMMARY AND CONCLUSIONS

1. A study of the results obtained in the metrazol convulsive treatment of 64 cases at the Mt. Pleasant State Hospital shows a remission rate of 68 per cent in involuntional melancholia, 64 per cent in manic depressive psychosis and 23 per cent in schizophrenia.

2. All patients with the affective psychoses showed some response to treatment.

3. The recovered patients have all remained well during the follow-up period, with the exception of one relapse.

4. Treatment is much more effective when given early in the course of the disease.

5. Early cases require fewer treatments to produce a remission.

6. The introduction of curare is eliminating the traumatic complications of metrazol convulsions.

7. The importance of early hospitalization of mental patients is stressed.

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## MODERN TREATMENT BY X-RAY\*

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## HISTORY

We all know that Wilhelm Konrad von Roentgen is credited with the discovery of the x-ray in 1895. However, most historians believe there can be little doubt but that Lenard, Hirtz, Crookes and other early investigators had actually produced x-rays but failed to recognize or isolate them, and it remained for Roentgen to continue their feats and communicate the great discovery to the world. Immediately following this announcement in 1895, many physicists, electrical engineers and practical physicians began to experiment and investigate, and in an incredibly short time x-ray operators were making routine examinations for fractures, dislocations and foreign bodies. In the midst of this practical work and scientific investigation, several of the experimenters observed that after a prolonged exposure to x-rays, an erythema of the skin appeared, and in some cases dermatitis

and deep ulceration occurred. Such was recognized as an "x-ray reaction". Schiff and Freund in Germany were particularly attracted by this biologic effect and within a few months they suggested the use of x-ray in the treatment of disease, their first attempts being made in nevus, hypertrichosis, cancer and tuberculosis. This was the birth of roentgen therapy.

Even as happens today, within a few months time, the medical literature was swamped with reports of the more or less successful treatment of various maladies with x-ray. It even stimulated the false belief that a cure for cancer had been discovered and the same was true for tuberculosis. Especially in this country, the history of x-ray therapy can be roughly divided into three stages, the optimistic, the pessimistic and the realistic. At first, enthusiasm overbalanced caution, and many physicians, without adequate study and knowledge of the subject, installed an apparatus and employed it for practical therapeutic purposes without realizing they were dealing with an exceedingly dangerous agent. A natural consequence was the incidence of serious injuries not only on the part of the patients but also to the operators, many of whom developed erythema of their hands which often led to serious sequelae. Furthermore, Brown and Osgood discovered that sterility was produced by the x-ray. This era of optimism lasted until about 1906. During those first ten years, the "radio-maniacs" as they have been called used the x-rays empirically on nearly every chronic disease and their reports in the literature were misleading and boasting of wonderful cures.

A period of pessimism or depression followed the discovery that the x-rays were capable of producing a cure in only a certain number of cases of cancer and did not replace surgery. Further disappointment was felt when it was decided that x-ray therapy was practically useless in the treatment of pulmonary tuberculosis. Finally, the laity and the greater part of the medical profession lost faith in the therapeutic value of the x-rays and even considered them exceedingly dangerous, since no satisfactory method of determining the amount administered had been evolved.

Then followed a wave of interest by scientifically inclined roentgenologists here and abroad who recognized both the advantages and limitations of the x-rays and determined to develop new methods for standardizing their work. Numerous instruments were designed to accomplish this purpose and the work of these men paved the way for most of the improvements in technic in recent years. As a result of their tireless endeavors a fairly reliable concept of the nature of x-rays and

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their limitations is possessed; and just as important a gradual restoration of confidence in roentgen therapy has followed.

Almost as soon as x-rays were discovered, experiments were begun in an effort to see how they affected living organisms. Many early reports were contradictory and incomplete. Recently a great deal of painstaking work has revealed many facts regarding the effects of radiation but the explanation of these facts is still obscure. Failla in 1937 offered the most helpful theory for the action of radiation on the cell and its nucleus, suggesting that a certain portion of the cell proteins is broken down during radiation into simpler substances of the type which dissociates or ionizes electrically. Then the ion concentration of the fluids both inside and outside the cell increases. However, the fluids outside the cell are diluted and carried away by the circulation, and in an effort to equalize the concentration, fluid enters the inside of the cell causing it to swell.

A general rule not literally true, however, is that the sensitivity varies directly with the reproductive capacity of the cell and inversely with its differentiation. Going from greater to less sensitivity, cells are classified as follows:

1. Lymphoid (spleen, lymph nodes, tonsil, bone marrow).
2. Epithelial (skin, secreting glands, testes and ovary).
3. Endothelial (blood vessels, pleura and peritoneum).
4. Connective tissue.
5. Muscle tissue.
6. Bone tissue.
7. Nerve tissue.

It has been shown that bacteria in pure cultures can be killed with sufficiently large doses of radiation, but in most cases they are so resistant that any attempt to destroy them as a clinical measure would require doses detrimental to the human organism. How then do we explain the efficacy of roentgen rays in many bacterial inflammations? The best explanation offered as yet relates to the radiosensitiveness of the leukocytes. We all know that leukocytic infiltration is one of the first steps in the cellular defense against infection and the greater the proportion of infiltrating leukocytes the better the response. It seems more than likely that the main action of the x-rays is to destroy a portion of the inflammatory cells, liberating antibodies and ferments and other protective substances within these cells and making them more available for defense purposes. Hence we attempt to explain the prompt result

seen in furunculosis, etc., by the beneficial influence of the x-ray on the leukocytes rather than a direct sterilization of the micro-organisms.

The radiosensitivity of the different varieties of malignant cells corresponds closely to that of the normal cell of the same kind except that they undergo mitotic division at a more rapid rate, and have less tendency to differentiate, thus being more susceptible to irradiation. The final results therefore are inhibition of cellular division, vascular degeneration and obliteration leading to degeneration of the tumor tissue and its replacement by fibrous connective tissue.

#### ACUTE INFLAMMATORY CONDITIONS

According to Desjardins of the Mayo Clinic many physicians are either unaware or skeptical of the favorable influence of roentgen rays on various forms of acute or chronic inflammations. He lists the acute inflammatory conditions in which the value of irradiation has been thoroughly established such as furuncles, carbuncles, abscesses, etc.

**Pyogenic Lesions:** Many pyogenic lesions fail to suppurate if treated early enough in the state of leukocytic infiltration. We avoid the use of hot dressings, etc.; the process is arrested and undergoes resolution. If the radiation is not applied until suppuration has set in, it hastens the process, shortening the duration of the lesion.

**Pneumonia:** Pneumonia that has failed to resolve responds very favorably to x-ray exposure as does also postoperative pneumonia. Naturally the best results are obtained from the earliest treatment.

**Acute Parotitis:** Cases of acute parotitis complicating certain operations clear up favorably within twenty-four to forty-eight hours after irradiation.

**Erysipelas:** In cases of erysipelas not superimposed upon diabetes or nephritis, x-ray irradiation is usually followed by prompt abatement of the process clinically and locally. However, it does not respond as well in children as in adults for some unknown reason.

**Gas Gangrene:** Kelly and Dowell at Creighton have been doing extensive work on a large number of cases of gas bacillus infections. According to them the only patients who died were those in whom the affected extremity had been amputated and they appear to have succeeded in reducing the mortality rate to less than ten per cent when amputation was necessary and to five per cent when it was not. Their work has commanded much attention and if confirmed by others should be a great boon to patients afflicted with gas bacillus infection.



**Peritonitis:** Radiologists at Henry Ford Hospital have experimentally injected virulent cultures of bacteria in the peritoneal cavity of rabbits following previous roentgen irradiations to the abdomen and minimal or no local lesions resulted. In no case did fatal peritonitis result. This research was prompted by the observation that no post-operative peritonitis occurred in 51 consecutive cases of resection for carcinoma of the rectum or sigmoid that had had four to six weeks preoperative x-ray therapy. They feel justified in continuing preoperative irradiation in contemplated resections of colon and rectum.

**Miscellaneous:** Other acute inflammations have been found to yield equally well to x-ray therapy. Operations have been avoided in certain cases of acute mastoiditis by the exposure of the mastoid region to small doses of roentgen rays for diagnostic purposes. Acute sinusitis and osteomyelitis have responded similarly to diagnostic doses.

#### CHRONIC INFLAMMATORY CONDITIONS

It has been known for years that many types of chronic inflammatory conditions are favorably influenced by roentgen irradiation, including chronic diseases of the skin, tuberculosis, keratitis and iritis, mycoses, etc. In general, doses must be larger and more frequent than for acute inflammations.

**Tuberculosis:** The response of tuberculous processes is characteristically slow. In tuberculous adenitis the region must be irradiated every three to four weeks for almost a year, but if calcification is absent, the inflamed nodes gradually recede, rendering the incidence of surgical procedures much less. Radiation is likewise effective in tuberculous peritonitis, iritis or keratitis. However, extreme care must be exercised not to give too large a dose for fear of leading to cataract formation.

**Mycoses:** Actinomycoses and blastomycoses respond favorably to irradiation if they are located superficially on the body and especially if the irradiation is supplemented with the use of iodides.

**Arthritis:** Pain is relieved and swelling reduced in chronic arthritis, thus diminishing disability when x-ray irradiation is employed. Best results are obtained in cases where the inflammation is still active as indicated by the tenderness. Equally good results are obtained in bursitis and spondylitis.

#### BLOOD DISORDERS

Roentgen therapy is indicated in the leukemias, Hodgkin's disease, lymphosarcoma, reticulum cell sarcoma, round cell sarcoma and polycythemia. It is not indicated in thrombocytopenic purpuras

or granulocytopenia. Blood cells are very susceptible to radiation, lymphocytes the most and monocytes the least. Leukemic cells are more so than normal blood cells. The desired effect is a destructive action on the abnormal cells, promising therefore only palliative relief. Indications for x-ray treatment in leukemia are fatigue, loss of weight, fever and pain due to pressure and itching. The effects are relief of symptoms and prolongation of life with no promise of cure. It is used only in chronic leukemias. More x-ray treatment is necessary in polycythemia than in leukemia, in an effort to depress the bone marrow cells enough to reduce the number of circulating red blood cells. Intensive irradiation of the spleen is advised in cases of purpura haemorrhagica when splenectomy is impossible.

#### SKIN DISEASES

Roentgen irradiation has widespread uses in conditions of the skin, its indications being grouped grossly as follows:

1. Inhibitions of cutaneous appendages such as hair, sebaceous and sweat glands.
2. Indirect effect on bacterial affections as mentioned previously.
3. Stimulating effect on chronic inflammations, such as eczema.
4. Therapeutic effect on new growths.
5. Anodyne effect in pruritus.

**Acne:** In addition to the pyogenic conditions mentioned previously such as carbuncles, erysipelas, etc., acne and acniform conditions respond favorably to radiation. One author states the percentage of cures with x-ray is higher than with any other form of treatment and recurrences are lower if proper precautions are taken.

**Fungus Diseases:** Roentgen rays are used for epilation in cases of ringworm of the scalp. They are preferred over thallium acetate because of less danger to the life of the patient and slower regrowth of hair which allows more time to eradicate the disease with medicinal measures. Numerous other fungi diseases, such as tinea barbae, moniliasis and the mycoses likewise respond to roentgen therapy.

**Eczematous Conditions:** X-rays have been used successfully in the treatment of eczema almost from the beginning of roentgen therapy, and modern writers are even more enthusiastic than were the earlier authors. All modern textbooks on dermatology and roentgen therapy call attention to the efficacy of irradiation in the treatment of eczema especially in chronic and recurring types.

**Psoriasis:** Although psoriasis is called an incurable disease it is doubtful if any therapeutic agent or combination of them can compare with the x-ray in general efficacy, but it is not always successful.

**Lichen Planus:** At present, dermatologists do not advise x-ray as routine treatment in generalized lichen planus, but prefer to use it only in localized patches and it is still questionable whether it is more effective than bismuth, arsenic and mercury preparations.

**Pruritis:** It is a well-established fact that irradiation will arrest an itching that accompanies eczema, dermatitis, etc., but little is known regarding its value in essential pruritis. One author states the effect is encouraging but more experience is necessary to state definitely its real worth. However, the impression gained is that irradiation provides one of the most certain methods of obtaining at least temporary relief.

**Hyperhidrosis and Bromidrosis:** The result of intelligent irradiation on these two commonly associated conditions is splendid.

**Hypertrichosis:** Most authors feel that there are very few patients who cannot be successfully treated with electrolysis and even though that method is tedious, expensive and time-consuming, it is far more satisfactory and less dangerous than irradiation.

**Warts and Corns:** Irradiation of warts is of value and has the following advantages: no danger of infection, permanence of cure, absence of pain and scarring, and rapidity and facility of treatment. The results in its use on plantar warts have made it the treatment of choice. However, it has not been possible to establish many clinical cures on corns with irradiation, especially hard corns.

**Angiomata and Nevi:** Better results are obtained in these conditions with radium than with x-ray.

**New Growths on Skin:** Today there is fairly general agreement that irradiation alone or combined with surgery constitutes the best method of combating keloids and hypertrophic scars. One writer states that if surgeons would recognize this condition early enough one or two treatments would prevent keloid formation. Other benign growths, such as xanthomas, fibromas, myomas, lipomas, etc., are not favorably affected by irradiation. Most roentgenologists agree that it is possible to obtain as high as 98 per cent clinical cures and 94 to 96 per cent permanent cures in selected cases of basal cell carcinoma, and 80 to 90 per cent in unselected cases. Best statistics for squamous cell carcinoma are shown by those

authors who employ radiotherapy plus surgical treatment. There is reason to believe that preliminary and postoperative irradiation at the site of the lesion and the draining lymphatic glands are of service in eradicating the disease completely. Certainly irradiation should be employed in all inoperable cases.

**Paget's Disease:** Since this disease is considered universally as part of carcinoma of the breast, x-ray and radium therapy is used only after radical surgery or in inoperable cases.

**Miscellaneous:** The value of roentgen therapy in various other conditions of the skin such as Addison's disease, herpes, Raynaud's disease, urticaria, etc., is as yet purely speculative and uncertain.

#### MALIGNANCIES

**Breast:** The employment of irradiation in the treatment of breast cancer is as old as roentgen therapy itself and it continues to advance, but there is no recent evidence to suggest that it will replace radical mastectomy as the most efficacious treatment because breast cancers are not very radiosensitive. Opinion as to the efficacy of postoperative irradiation remains divided but by far the majority favor using it as a supplement to surgery. Although there are relatively few published reports, results are optimistic in preoperative irradiation, especially if followed by postoperative therapy. It is in the palliative treatment of advanced carcinoma of the breast that roentgen therapy serves its most important function and the results are as spectacular as they are gratifying.

**Uterus:** Carcinoma of the cervix is the most radiosensitive cancer of the body and its readily accessible location makes it particularly suitable for all types of irradiation. The ultimate aim is to destroy the local lesion and to control the metastasis. Bowing and Fricke reviewed the results of almost 1,500 cases at the Mayo Clinic and they express the opinion that the intensive broken-dose method of radium therapy followed by a course of roentgen treatment offers the best results. In France, several authors believe the ideal treatment is preliminary fractional irradiation followed by intracavitary radium insertion. They write of excellent results claiming that after the first few treatments, the emaciated anemic patient feels relieved, the appetite improves, hemoglobin rises and chances of infection are decreased. Locally, favorable changes occur in the neck of the uterus, its permeability is restored, the neoplastic lesion becomes aseptical and the tumor is reduced in size. Forty-four to forty-five per cent of their cases have been so affected.



*Brain:* A review in the Journal of Radiology in 1938 reports the results in 44 cases in which the diagnosis of brain tumor was proved by biopsy or necropsy. Fifteen of a group of twenty-four diagnosed clinically showed improvement for periods varying from one to seventy-two months and it is certain that improvement in nine of the fifteen was due chiefly to x-ray therapy.

*Buccal Carcinoma:* Here x-ray therapy is preferred for tumors of the base of the tongue and advanced or bulky growths in other regions, particularly in the floor of the mouth.

*Larynx and Pharynx:* Roentgenotherapy in carcinoma of the pharynx and larynx has made remarkable progress in the number of cures obtained in the past ten years. Tumors of the larynx are known to be more radiosensitive than the normal tissues. In all cases in which irradiation in large doses is inevitable, fractional doses are given on a predetermined basis in order to increase the tolerance of the healthy tissue. In cancer of the larynx, roentgen therapy is found to compete strongly with surgery.

*Esophagus:* Since most patients with carcinoma of the esophagus come to the physician relatively late, surgical treatment has not proved satisfactory and endo-esophageal radium therapy has been disappointing, so that roentgen treatment from without has given the best results so far, especially if intensive radiation is given unless it is contraindicated by the age or general condition of the patient.

*Thyroid Gland:* Carcinoma of the thyroid gland is not so rare as it might first seem, since 2.4 per cent of 15,000 cases of thyroid operations proved to be carcinomatous. Surgical treatment alone has not been satisfactory and adequate post-operative radiation is necessary.

*Bone:* X-ray therapy is only secondary to surgery.

*Rectum:* The consensus of opinion is that the ideal treatment consists of preoperative radiation, surgery and postoperative radiation.

#### MISCELLANEOUS CONDITIONS

*Angina Pectoris:* The adrenal glands have been irradiated in cases of angina pectoris occurring in persons with diseased coronary vessels, in which the pain appeared on exertion, excitement or exposure to cold; 76 out of 100 patients were relieved of the sternocardiac pain following irradiation. The theory behind it is the supposition that an anoxemia of the cardiac muscle occurs under such conditions due to an acute discharge of epinephrine from the adrenal glands which nor-

mally is compensated for by a dilatation of the coronary vessel but which cannot occur in coronary artery disease. Here irradiation of the adrenal glands diminishes the amount of adrenalin discharged.

*Amenorrhea and Sterility:* Present studies indicate that x-ray therapy is a valuable therapeutic agent for the treatment of these conditions. Whether the roentgen irradiation directly affects the ovary, uterus or pituitary gland or is an indefinite endocrinologic stimulant is unknown, but the fact remains it is equally as good a treatment as organotherapy. Treatment in cases is limited usually to irradiation of the ovaries but at times additional therapy is given to the pituitary and thyroid glands. No harm to patients has been reported in one series of 197 cases.

*Functional Uterine Bleeding:* Two physicians in Denver irradiated the long bones in several such cases which were intractable to ordinary forms of treatment, the only abnormal clinical finding being a decreased platelet count which they assumed was due to deficient formation in the bone marrow. Hence they irradiated the long bones and the bleeding immediately ceased when the platelet count returned to normal.

*Hydatiform Mole and Chorio-epithelioma:* Practically all authors agree that once the diagnosis of these conditions is made the proper treatment is immediate hysterectomy, but reports of treatment with x-ray and radium are beginning to appear in the literature, especially for inoperable cases and poor surgical risks.

*Cyclic Pulmonary Edema at Menses:* Acute pulmonary edema in mitral stenosis is not infrequent and may be precipitated by a number of factors including the retention of fluid at menses. Griffith in Philadelphia reports such a case and he irradiated the pituitary gland on the basis of the cause being an overactivity of the antidiuretic hormone of the posterior lobe. His patient became entirely free of pulmonary symptoms thereafter.

*Hyperthyroidism:* One author states that the roentgen therapy of hyperthyroidism has resulted in cures in about 65 per cent of the cases, in marked improvement in 20 to 25 per cent and about ten per cent failures, which figures approximate those of surgery. It is indicated in any patient not in crisis or not suffering from pressure symptoms. It has the advantages that the patient can pursue his occupation without interruptions, there is no pain, shock, risk of death or scar, and it can be used in poor operative risks. The dangers are risk of burns, telangiectasis and skin atrophy, which can be eliminated by a careful measurement of the dosage.

*Acromegaly:* Vaughan concludes that irradiation should be used preoperatively in adenomas of the pituitary gland unless there is imminent danger of permanent visual impairment.

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## ACUTE PANCREATIC NECROSIS\*

## The Unsolved Acute Abdominal Disease

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Acute necrosis or hemorrhage of the pancreas has been reported with increasing frequency during the past decade yet it remains an unsolved acute abdominal catastrophe. The etiology is undetermined in most cases, its pathology is not entirely understood, the diagnosis is often missed, the morbidity and mortality rates remain very high and there is much uncertainty as to the relative merits of medical and surgical therapy.

## INCIDENCE

Acute pancreatic necrosis is by no means a clinical curiosity as the following reports indicate:

Henderson	Boston City Hospital	60 cases in	15 years
McWhorter	Chicago Surgical Society	64 cases	
Douglas	St. Luke's Hospital, N. Y.	32 cases in	15 years
Eliason and North	University of Pennsylvania	13 cases in	5 years
Copeland and McPetridge	Charity Hospital	11 cases in	4 years
McNamara	Finley Hospital	5 cases in	400 autopsies
Trasoff and Scarf	Mt. Sinai Hospital	16 cases in	3 years
Lewison	Beth Israel Hospital	35 cases in	18 years

The author has encountered eleven cases in the past twelve years; during the same period acute perforation of peptic ulcer has been seen twenty times.

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## ETIOLOGY

Much is known experimentally and clinically concerning acute necrosis of the pancreas but the primary cause is still unsolved in most cases. Several theories exist as to the cause of this disease. One theory is that there is a reflux of bile into the pancreatic duct due to obstruction by a stone or spasm at the sphincter of Oddi. Experimentally acute changes from edema to hemorrhage and necrosis always result promptly from the introduction of bile into the pancreatic duct, with infected bile producing more violent reactions. The fundamental lesion in all cases is necrosis. Clinical proof, however, is lacking in most cases and studies of the anatomy of the junction of the common and pancreatic ducts show a wide variation as to the possibility of obstruction resulting from spasm or stone impaction. Cameron and Noble report obstruction possible in 66 per cent of 100 specimens, Mann in 3.5 per cent, Judd in 4.5 per cent, and Elman of St. Louis in a recent report of 50 autopsied cases found obstruction possible in 60 per cent. Another suspected cause is vascular spasm resulting from irritation of the pancreatic nerves, but this is even more pure theory and has not been proved. The lymphatic theory is probably never a factor since pancreatic necrosis is not due to infection. Infections in the blood stream such as occur in mumps, accidental trauma and trauma from gastric resection, account for a few cases.

Acute pancreatic necrosis is associated with chronic gallbladder disease with stones in more than 70 per cent of cases and it is a complication of acute cholecystitis in approximately 20 per cent of cases. As an indication, gallbladder disease was present in 69.8 per cent of Schmeiden and Sebening's series, in 71 per cent of 232 cases collected by Eliason and North, and in all but one of 134 cases reported by Reichl in 1939. Thus quoting Reichl, "biliary disturbance is a factor but the primary provoking cause is still problematic."

## PATHOLOGY

The unsolved problem in the pathology of acute pancreatic necrosis is whether or not the varied pathologic pictures are all different stages of the same chemical process. The anatomic pathologic classification of Schmeiden and Sebening is satisfactory; first, acute pancreatic edema with or without fat necrosis; second, hemorrhagic infarction; and third, pancreatic necrosis with foci of softening, sequestration and abscess formation. In brief it may be said that the fundamental lesion is a chemical necrosis with autodigestion resulting in impairment of the nutrition of the cells with



activation of trypsin and the formation of products of high toxicity. Infection is not the primary cause.

#### CLINICAL COURSE

The clinical picture is probably best understood of all phases of acute pancreatic necrosis, yet each case presents a different picture and the diagnosis remains difficult. Cases have been reported in patients from two to seventy-seven years of age, but the majority are past forty years of age. Obesity is common, cases are about equally divided between the sexes, and are rare in the colored race. Three types are encountered clinically with the chief symptoms and signs listed below:

1. Hyperacute. May result in sudden death; patients die in a few to thirty-six hours. Extreme pain in epigastrium and back often suggests acute coronary occlusion. Shock severe, vomiting persistent, cyanosis marked and characteristic.

2. Acute pancreatic necrosis or hemorrhage. Pain in epigastrium and back, often felt to left of navel, more severe and persistent than gall stone colic, vomiting present, tenderness develops later over pancreas and into left flank, fever 100 to 101 degrees, white count elevated often to 25,000. Later ileus and distention develop due to peritonitis. Mass may form due to hemorrhagic infiltration, cyst or abscess. Rigidity is a late sign and jaundice appears late in a small percentage of cases.

3. Acute pancreatic edema. Characterized by a mild attack of epigastric pain and vomiting with epigastric tenderness. Patient recovers in a few days and the attack is usually diagnosed as gall stone colic.

Of laboratory aids the determinations of the serum amylase and lipase are of value in acute pancreatic disease. A recent report from the Mayo Clinic by Comfort and Osterberg indicates that serum concentrations of both amylase and lipase are of diagnostic value, the amylase being an accurate test in 87 per cent of 31 cases and the lipase showing a 99 per cent accuracy in 84 cases. They have found for normal values an upper limit of 320 units for amylase and 1.0 to 1.5 cubic centimeters for lipase. About one hour is necessary for the amylase determination and twenty-four hours for the lipase. Tests must be made in the first ten days of an attack and are most accurate in the first forty-eight hours. Falsely elevated values apparently occur in only a small percentage of cases. The tests are not of value in determining the severity or progress of the disease. The urine will show sugar at some stage of the disease in about ten per cent of cases. The leukocyte count may be normal but usually ranges from

15,000 to 25,000. At operation brownish peritoneal fluid and fat necrosis are characteristic but they may be absent. The pancreas is swollen with edema, hemorrhagic infiltration, necrosis or abscess depending on the stage or type of the disease.

#### DIAGNOSIS

With all our knowledge of acute pancreatic necrosis the diagnosis is still seldom made as the following typical figures indicate:

Lewison	35 cases	correct diagnosis	11%
McWhorter	64 cases	correct diagnosis	12%
Schmeiden and Sebening		correct 21.8%, suspected	17%
de Takats	22 cases	wrong diagnosis	100%
McNamara	5 autopsies	pancreatitis suspected	1 case

In differentiation, in 118 cases of acute necrosis reported by Brocq the diagnosis was correct in only 29 cases or 25 per cent. Other diagnoses were: perforated ulcer, 25 cases; ileus, 23 cases; appendicitis, 13 cases; cholecystitis, 11 cases; and peritonitis, 15 cases. Mesenteric thrombosis, acute intestinal obstruction, renal colic and acute coronary heart disease were diagnosed in a few of the 118 cases. The diagnosis of pancreatitis becomes suggestive in the presence of a history of gallbladder disease, obesity, initial shock, very severe pain and later tenderness over the area of the pancreas. The clinician often neglects to think of the disease, yet even if he were "pancreatic-necrosis conscious" an accuracy of 50 per cent would be very commendable.

#### MORTALITY

The present mortality rate in acute pancreatic necrosis is probably 40 to 50 per cent under any type of management as the following typical reports indicate:

Henderson	60 cases	53%
Nordman's Clinic	23 cases	54%
Copeland and McFetridge	11 cases	71%
Eliaison and North	13 cases	80%
Smead	12 cases	33%
Reichl	89 cases treated surgically	45%
	31 cases treated medically	13%

Under medical treatment the question of diagnosis in patients who recover is often problematic and selection of mild cases for conservative therapy influences mortality figures. Many patients who recover from the acute phase of necrosis will die in a few weeks or months from pancreatic insufficiency.

#### THERAPY

A study of the literature shows that until the past few years immediate surgical intervention was advised by most authors. Recently more conservative treatment is suggested, yet no agreement has been reached in which type of case it is indicated. Nordman feels that the fate of the patient with acute pancreatic necrosis is predetermined from the beginning and cannot be influenced by surgical intervention. Henschel in 1938 reports

his mortality rate on a conservative regimen fell from 50 to 24 per cent, Walzel's from 86 to 24 per cent, and Haberer's from 53 to 23 per cent. Smead in 1936 states that early operation in acute pancreatic necrosis is not justifiable; the procedure does not lessen shock or limit the extent of necrosis in the pancreas. Schmeiden in 1939 asserts he sees various stages in the course of the disease and he feels that the process can be halted by drainage of the exudate. Trasoff and Scarf in 1939 feel that further trial with conservative therapy is warranted in acute pancreatic necrosis. Eliason and North favor deferring operation until after the acute phase but emphasize if expectant treatment is to be employed, accuracy of diagnosis is absolutely essential. Bernhard in 1939 feels that initial expectant treatment rather than early operation is to be considered.

By contrast Copeland and McFetridge in 1934 report that prompt surgery minimizes the pancreatic destruction by relieving tension and permitting drainage of pancreatic juices with less resultant peritonitis and less absorption of toxic products. Verne Hunt in 1940 writes that he feels prompt intervention in the first six to twelve hours may help to halt the process in the pancreas in the edematous stage and avoid hemorrhage and necrosis, but that after thirty-six or forty-eight hours surgical intervention is futile.

Waugh in 1940 states "the treatment of acute pancreatitis is surgical", but adds that delayed operation is probably advisable in selected cases and in the hands of selected surgeons. However, due to the difficulty in correctly diagnosing the disease the overlooking of an acutely perforated peptic ulcer might mean death for the patient. Reichl in 1939 writes that the feasibility of conservative treatment rests on a correct diagnosis by thorough clinical examination, determining of the fasting blood sugar and the amylase content of the urine. Under conservative treatment his regimen is as follows: no food, morphine and antispasmodics, stimulation of intestinal peristalsis by drugs, moist heat to the abdomen, gastric suction as indicated and intravenous fluids.

If operative procedures are undertaken one probably accomplishes two things; first, the diagnosis is established and other emergencies requiring immediate operation are ruled out; and second, relief of possible tension in the pancreatic and common ducts is obtained by drainage of the gallbladder or common duct. Only in mild cases is a cholecystectomy indicated. In early cases the pancreas should be exposed by an incision through the gastrohepatic omentum occasionally splitting the peritoneum over the pancreas. Drainage should be established by soft rubber dam and gauze

drains. Under no circumstances should the pancreas tissue be incised because of the danger of hemorrhage and necrosis. In late cases if an abscess or necrotic tissue is present, adequate drainage should be established. Drains should not be removed too early because drainage and sloughing may continue for weeks. In most cases if the patient survives his acute necrosis without operation, exploration of the biliary tract should be undertaken after six or eight weeks as a prophylactic measure.

#### CONCLUSIONS

From a study of the literature and the experience of the author the following conclusions would seem to be justified:

1. Acute pancreatic necrosis is still an unsolved disease.
2. The degree of pancreatic involvement probably cannot be influenced by medical or surgical measures.
3. In case of a doubtful diagnosis early exploration should be undertaken to avoid the danger of overlooking perforated ulcer and other emergencies. If acute pancreatitis is found and disease of the biliary tract is present, a cholecystotomy or choledochotomy and occasionally a cholecystectomy is indicated.
4. Operation should be avoided in the hyperacute type.
5. If the diagnosis is certain conservative measures should be used, shock treated and the fluid and electrolyte balance restored. If abscess, cyst or sequestration develop, adequate drainage should be established.
6. Early operation should be advised in all patients with acute or chronic cholecystitis with stones to avoid the complication of acute pancreatic necrosis.
7. After recovery from an acute attack of pancreatic necrosis the biliary tract should be investigated and any disease present should be corrected to aid in prevention of further attacks of pancreatitis.

#### CASE REPORTS

The following eleven cases have been seen by the author in the past twelve years and in all but one case the diagnosis was proved by operation or autopsy. They are listed in the order in which they were seen. The pathologic type of each case according to the classification by Schmeiden and Sebening is indicated by letter.

Case 1. Type B. Mrs. W. S., age 63, history of gall stone colic, pain three plus in epigastrium, shock plus, vomiting two plus, tenderness over



pancreas, jaundice plus, no cyanosis or glycosuria, white count 16,000, fever 100 degrees, mass gradually developed. Operation three weeks after onset. Preoperative diagnosis, cyst of pancreas. Findings, large hemorrhagic cyst, fat necrosis plus, chronic gallbladder with stones. Procedure, drainage of gall bladder and cyst. Patient recovered, fistula closed. Fifteen months later had biliary colic; common duct stone and gallbladder removed. No further attacks.

Case 2. Type A. Mr. C. R., age 33, pain two plus in epigastrium, shock plus, epigastric tenderness and general rigidity, no cyanosis, jaundice or glycosuria, white count 25,000. Operation seven hours after onset. Preoperative diagnosis, perforated peptic ulcer. Findings, edema of pancreas, peripancreatic tissues bile stained and edematous, no fat necrosis, mild chronic gallbladder inflammation. Procedure, drainage of gallbladder, drain to pancreas through gastrohepatic omentum. Uneventful recovery. Mild recurrent attack five years later.

Case 3. Type C. Mrs. G. H., age 65, obese, history of gallbladder attacks. Pain three plus right upper quadrant, vomiting two plus, tender and rigid right upper quadrant, no shock, cyanosis or jaundice, no glycosuria, white count 14,000, fever 100 degrees. Operation eight days after onset. Preoperative diagnosis, empyema of gallbladder. Findings, entire pancreas necrotic, abscess ten centimeters in diameter below head of pancreas, fat necrosis plus, acute inflammation of gallbladder with stones, abscess in gallbladder wall at fundus. Procedure, drainage of abscess of pancreas and drainage of gallbladder. Results, profuse drainage of pus and necrotic tissue. Died twenty-four days after operation. Autopsy, complete necrosis of pancreas, no peritonitis, common duct normal.

Case 4. Type B. Mrs. J. N., age 62, obese, no gallbladder history. Pain four plus in epigastrium, shock three plus, vomiting severe, cyanosis marked, diffuse abdominal tenderness with distention, no rigidity, pulmonary edema, glycosuria present, white count 19,000, fever 103 degrees. No operation. Died fifteen hours after onset. Diagnosis, coronary heart disease(?) Autopsy, marked edema and hemorrhage of entire pancreas, chronic gallbladder disease, with stones, common duct normal.

Case 5. Type A. Mrs. F. F., age 44, marked obesity, weight 325 pounds, history of gall stone colic. Pain four plus in right upper quadrant, shock plus, vomiting two plus, no cyanosis or glycosuria, white count 20,000, fever 100 degrees, improved under conservative therapy. Operation

seven days after onset. Diagnosis, gallbladder disease. Findings, pancreas swollen and firm, no hemorrhage, extensive fat necrosis, subsiding acute cholecystitis with stones. Procedure, removal of gallbladder. Recovery, no recurrence.

Case 6. Type C. Mrs. P. T., age 55, obese, no gallbladder history. Pain plus in epigastrium, diffuse tenderness with distention, vomiting two plus, no cyanosis or shock, white count 24,000, fever 103 degrees. Preoperative diagnosis, peritonitis and ileus, cause(?) Operation under local anesthesia six days after onset. Enterostomy, died following day. Autopsy, entire pancreas necrotic, fat necrosis plus, chronic gallbladder disease, no stones.

Case 7. Type C. Mrs. J. B., age 67, not obese, history of gall stone colic. Pain plus in upper abdomen, vomiting two plus, no shock or cyanosis. Jaundice plus, tender over pancreas, no glycosuria. White count 11,000, fever 100 degrees. Preoperative diagnosis, acute pancreatitis. Operation five days after onset (advised first day). Findings, necrosis entire pancreas, diffuse fat necrosis, chronic gallbladder disease with stones. Procedure, drainage of gallbladder and pancreas through gastrohepatic omentum. Results, drainage of pus and necrotic tissue, low grade fever, anemia and weakness. Died ten weeks after operation. Autopsy refused.

Case 8. Type C. Mr. P. M., age 53, obese, history of gallbladder disease. Pain two plus in epigastrium, vomiting plus, no shock or cyanosis, tender in epigastrium and to left, jaundice plus, no glycosuria, white count 14,000, fever 99 degrees. Preoperative diagnosis, acute cholecystitis with stones. Operation twenty-four hours after onset. Findings, pancreas swollen and tense, no hemorrhage, fat necrosis two plus, chronic gallbladder disease with stones. Procedure, drainage of gallbladder, drain to pancreas through gastrohepatic omentum. Recovered, no further attacks for six years.

Case 9. Type B. Mrs. H. W., age 64, few mild gall stone attacks. Pain two plus in epigastrium, vomiting plus, no shock, cyanosis or jaundice. Tender to left of navel, no glycosuria, white count 15,000, fever 100 degrees. Mass after six days, distention present. Diagnosis, acute pancreatitis. Died fourteen days after onset. Autopsy, extensive hemorrhage of entire pancreas, no softening, no peritoneal fluid, fat necrosis plus, chronic gallbladder disease with stones, common duct normal.

Case 10. Type C. Mrs. V. N., age 29, history of gall stone colic. Pain plus in epigastrium and right upper quadrant, no shock or cyanosis,

no glycosuria. Jaundice after operation. White count 18,000, fever 100 degrees. Preoperative diagnosis, acute cholecystitis. Operation forty-eight hours after onset. Findings, edema of pancreas, diffuse fat necrosis, chronic gallbladder disease with stones. Procedure, drainage of gallbladder, appendix removed. Fistula for four months, expelled one pancreatic(?) stone. Complete recovery, well for past two years.

Case 11. Type A. Mrs. H. McQ., age 24, obese, history of biliary colic. Pain two plus in umbilical area, shock plus, vomiting plus, no jaundice or cyanosis, tender in epigastrium and left flank, no glycosuria. White count 20,000, fever 100. Diagnosis, acute pancreatitis, chronic gallbladder disease with stones. Treated medically. Recovered, no further study.

#### SUMMARY OF ELEVEN CASES

Male 2. Female 9.

Gallbladder disease present in 11 cases—100%			
Gall stones present in 10 cases, common duct stones in 1 case			
Diagnoses made			
Acute pancreatic disease	4 cases		
Perforated ulcer	1 case		
Acute cholecystitis	3 cases		
Gallbladder disease	1 case		
Coronary heart disease	1 case		
Peritonitis and ileus	1 case		
Correct diagnosis	4 cases	36%	
Pathology present			
Edema	3 cases	No deaths	
Hemorrhage	3 cases	1 death	
Necrosis or abscess	5 cases	4 deaths	
Therapy			
Surgery			
Immediate	3 cases, died 0, recovered 3		
Delayed	5 cases, died 3, recovered 2		
Medical	3 cases, died 2, recovered 1		
Operative procedures			
Drainage of pancreas	2 cases		
Drainage of abscess	2 cases		
Drainage of cyst	1 case		
Drainage of gallbladder	6 cases		
Removal of gallbladder	1 case		
Enterostomy only	1 case		
Mortality	5 cases	45%	
Autopsies	4 cases		

#### Discussion

Dr. H. F. Dolan, Anamosa: My words are those of appreciation for the excellent presentation of a subject which is interesting to every one here. Dr. Downing has made an exhaustive study of this clinical entity.

I do not believe there is a surgeon in this audience who has not seen several cases of acute pancreatic necrosis. You were impressed by its subjective and objective symptoms, for it is very singular in its manifestations, unendurable abdominal pain with profound shock. After visualizing this picture you may have said to yourself; how can this diagnosis be missed, yet we continue to miss it. Is it because we forget that every sick man has a pancreas?

If one were to describe this clinical picture in terms of other diseases it would be necessary to consider two clinical entities. The abdominal picture is one; the general appearance of the patient, ash grey, clammy moist skin, shock, feeble pulse and agony is another. The epigastric pain is due to the location of the pancreas; the intensity is due to the proximity of the solar plexus and peritoneum. A high intestinal obstruction or torsion of the bowel

may give us a similar abdominal picture, and an acute coronary involvement may give us the general picture of apprehension, shock and agony so evident in pancreatic necrosis. If we could embody in one individual the symptoms and findings of these two entities, coronary disease and a high torsion of the bowel, we would have a picture conforming to that of acute pancreatic necrosis.

My experience consists of eight cases. Two were brought into the hospital in a moribund condition. The diagnosis of acute pancreatic necrosis was confirmed by autopsy. In the remaining six cases the diagnosis was missed. All patients were operated upon; two recovered; four died. One of these cases is interesting. The patient was operated upon for removal of a diseased gallbladder containing stones; her recovery was smooth until the tenth day when she developed severe epigastric pain associated with shock. A diagnosis of obstruction was made. Exploration revealed an acute hemorrhagic pancreatitis. Drainage was established and she made a complete recovery.

The cause of death in this condition is a combination of factors: nervous shock, anaphylaxis and a profound toxemia.

In conclusion it may be said that the etiology is obscure and there is room for a great deal of experimental work. When this clinical picture presents itself, the majority of surgeons feel disposed to operate, for it is better to operate and be wrong, than not to operate and be wrong. It is impossible to estimate the mortality rate following conservative treatment, because some of the patients diagnosed as having acute pancreatic necrosis may die of some other abdominal lesion. In an effort to diagnose this condition correctly, let us not forget that every sick man has a pancreas.

Dr. H. A. Amesbury, Clinton: In order properly to treat pancreatic necrosis, an understanding of the etiology is necessary. As Dr. Downing has pointed out a number of factors have been blamed for producing this condition. Of these we feel that the most probable cause is the retrojection of infected bile. In order for this theory to be tenable, it must be demonstrated that such a thing is possible. In 1923, Mann and his co-workers carefully dissected 200 bodies and found that such retrojection was anatomically possible in only 20 per cent. If one examines any large series of cases and compares the number of gallbladder disease and the number of cases of acute pancreatitis in that series, he will find that the latter falls well within this range of possibility. Symptomatically, in our series of six cases, each started out as a case of gallbladder disease. In fact, one or two patients developed pancreatic necrosis, while they were in the hospital under observation because of gallbladder trouble.

From a diagnostic standpoint, I wish to emphasize one point which Dr. Downing mentioned; that is, tenderness in the left flank. The pancreas crosses the spine and the tail comes to lie in relation with the left kidney. Therefore, if the pancreas becomes involved, there is tenderness when pressure is made



over its tail. We have come to feel that given a case of what seems to be gallbladder trouble, with, in addition, tenderness in the left flank with a negative urine, that case should be diagnosed as acute pancreatitis.

Except for the acute fulminating cases who are in definite shock, we feel that the condition is surgical, first and last. Patients in the fulminating stage are so ill that one would not operate upon them. We feel the condition is no more a medical problem than is acute appendicitis. If the theory as to etiology is correct, if the condition arises because of retrojection of infected bile, then by all means the biliary stream should be diverted. We have no proof that one invasion of the pancreatic system by bile is enough to initiate the syndrome. It may be due to repeated insults and so the gallbladder at least, should be drained. Whether more should be done depends on the patient's condition. Drainage of the pancreas by carrying drains down to that organ is probably of value. One need not incise the capsule because it has already ruptured as evidenced by the findings of fatty changes when the abdomen is opened. Furthermore, the vascularity of the gland as well as the great splenic vessels makes incision of the pancreatic capsule hazardous. Dr. Downing has said that probably the most important point of his paper is the point of prophylaxis, urging surgery in cases of obvious gallbladder disease. I wish to emphasize the importance of this point by referring to one case which we saw in 1931. This woman had had a number of attacks of definite gallbladder trouble. Her physician had urged surgery, but as patients will do, she had postponed it. She finally agreed that if she had another attack, she would go to the hospital. Accordingly, we saw her with what seemed to be a definite cholecystitis. We advised surgery, but discovered that she showed four plus sugar. She was treated for this and by morning was under control. Surgery was proceeded with, and in addition to her acute cholecystitis, she had an acute pancreatitis. She had a very stormy convalescence, and remained a diabetic patient. In two months she returned with a large epigastric mass which on investigation proved to be a large pseudopancreatic cyst. This was dissected out and again after a very stormy convalescence, she recovered but she remains a diabetic patient. We feel that this condition in her case could have been entirely prevented if she had availed herself of her physician's counsel at the early date.

## THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

### THROMBOSIS OF THE ASCENDING AORTA WITH EMBOLISM OF THE SUPERIOR MESENTERIC AND RIGHT FEMORAL ARTERIES

JOHN C. HANCOCK, M.D., Dubuque

Thrombosis of the aorta is rare and from a review of recent literature that of the ascending aorta is extremely so. If for no other reason, the case to be presented is of interest. Also worthy of note is the series of conditions which the patient survived after the age of seventy years only to succumb at ninety-three from mesenteric and femoral emboli, which had their origin in a thrombus of the ascending aorta. It indicates how nature's repertoire of diseases ultimately overcomes any individual's vitality, however amazing it may be.

#### CASE REPORT

*Chief Complaint:* The patient, a white man ninety-three years of age, was admitted to the Finley Hospital, October 10, 1938, because of "pain and distention of the abdomen and cough."

*Family History:* The patient's wife and a daughter died of diabetes. About nine years before death the daughter had a renal calculus weighing thirteen ounces removed. The patient's history indicated that it had been present for four years. Another daughter died of mesenteric embolus secondary to a thrombus of the left auricle (Autopsy 427). One son died of cancer of the urinary bladder (Autopsy 468).

*Past History:* Up to seventy years of age the patient had enjoyed unusually good health. At that time he developed a urinary infection which cleared up promptly, although a diagnosis of chronic prostatitis was made. Shortly afterward a right inguinal hernioplasty and orchidectomy were performed with an uneventful recovery. At seventy-eight years of age he was troubled by hemorrhoids, had an attack of tonsillitis and intermittent attacks of prostatitis. He also complained of dizziness and this was thought to be due to infected teeth. The next year, following the extraction of several teeth, the dizziness disappeared. At seventy-nine the left long saphenous vein became varicose and he had exacerbation of the prostatitis with pyuria and dysuria. At eighty-one he had gastric symptoms and polyarthritis and a diagnosis of probable cholecystitis and appendicitis was made. At eighty-two he had influ-

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enza and the left long saphenous vein became noticeable. At eighty-five he had occasional attacks of hematuria with frequent nocturia and the left inguinal hernia became more troublesome. A hernioplasty was done with an uneventful recovery, but later there was retention of urine with pyuria. At eighty-six the prostate gland became hypertrophied and a suprapubic prostatectomy was performed with an uneventful recovery. Three years later, a left hydrocele with epididymitis began to develop and required tapping two years later. In view of the patient's age when many of the surgical procedures were perpetrated one might question the judgment used in instituting them. Familiarity with the patient's resistance combined with the practice of taking a week or more to accustom the patient to the recumbent position before operating, successfully prevented the occurrence of hypostasis usually incident to posture and age. The healing of the wounds was as satisfactory as that of a youngster. At ninety-two the patient had a typical attack of acute appendicitis with localized tenderness, fever, a leukocytosis of 14,700 and positive x-ray findings, but after prontosil was administered the symptoms gradually subsided. At that time diverticulosis of the descending colon was also demonstrated by the x-ray.

*Present Illness:* The day before admission the patient was seized by a severe pain in the left abdomen at the level of the umbilicus. The left side of the abdomen became distended. After enemas with fair return he obtained some relief but abdominal soreness persisted. He had developed a slightly productive cough and signs of bronchitis.

*Physical Examination:* The temperature was 98.4 degrees, the pulse was 88 and the respirations were 24 per minute. The blood pressure was 115/50. The general examination showed moderate distention of the abdomen and there was evidence of considerable gas. There was slight tenderness over the lower abdomen. The rectal examination was negative.

*X-ray Examination:* A film of the chest showed the appearance of chronic bronchitis. The right diaphragm was elevated but moved on respiration. A flat plate of the abdomen showed marked distention of the small bowel due to gas. The latter was also present in the large bowel. A barium enema showed diverticula but no evidence of obstruction in the colon. The roentgenologist's conclusions were: chronic bronchitis; obstruction of the small bowel; diverticulosis of the colon.

*Clinical Course:* The distention of the abdomen grew worse in spite of nasal suction and

enemas. On the second day in the hospital the patient suddenly developed a sharp pain in the right leg; the thigh became bluish red in color and felt cold. The temperature rose to 104 degrees and the pulse to 140 per minute. The patient failed rapidly and died on the third day.

*Clinical Diagnosis:* Intestinal obstruction; right femoral thrombosis; diverticulosis of the colon; bronchitis.

*Necropsy Abstract:* The body was that of a well developed and nourished white man estimated to measure 72 inches in length and to weigh 170 pounds. Externally the body showed surgical scars in each inguinal region and just above the symphysis pubis. There are numerous scars of phlebectomies over the lower extremities. The abdomen contained 300 cubic centimeters of blood-tinged, opalescent fluid. The middle two-thirds of the small intestine were dull reddish brown and infiltrated with old blood. In some areas they were necrotic. A firm, grayish-red clot was found in the superior mesenteric artery which was sclerotic but had a fairly large lumen. The mesenteric veins contained no thrombi. The appendix was thickened by fibrous tissue and bound to the cecum by fibrous adhesions. The heart showed relatively minor changes due to arteriosclerosis but the ascending aorta was thickened, sclerotic and showed some small areas of calcification where there was a tendency for the intima to "ulcerate." About eight centimeters above the aortic cusps there was a lobulated, dark red to gray thrombus which was adherent to the ascending aorta. Another firmly impacted embolus was found in the right femoral artery and the limb was irregularly livid and edematous. The other positive findings are given in the anatomic diagnosis.

*Anatomic Diagnosis:* Primary: 1. Arteriosclerosis; 2. Thrombosis of the ascending aorta; embolism of the superior mesenteric artery with gangrenous infarction of the small intestine; sero-hemorrhagic peritonitis; 3. Embolism of the right femoral artery with congestion and edema of the leg. Subsidiary: Surgical scars (suprapubic prostatectomy; bilateral inguinal hernioplasty; right orchidectomy phlebectomies over the lower extremities); diverticula of the sigmoid; chronic bronchitis; chronic appendicitis.

#### DISCUSSION

With few exceptions arterial, thrombotic emboli originate in the left side of the heart, the aorta or an artery between the site of the impacted embolus and the heart. The exceptions are those occurring in the pulmonary artery (pulmonary



embolism) which are of venous origin; those small enough to pass through the pulmonary capillaries thus reaching the arterial circulation, and those entering the left auricle from the right through an incompletely closed foramen ovale (paradoxical embolism). In most instances arterial embolism is the result of the detachment of a portion of a thrombus in the left side of the heart as a complication of cardiac failure from any cause or of vegetations from the mitral or aortic valves in endocarditis. Willius<sup>1</sup> found emboli occurred in about 25 per cent of patients dying of cardiac disease.

Thrombosis and embolism of the aorta are rare and a review of the published descriptions indicates that often the two terms are used almost synonymously. Welch<sup>2</sup> who in 1898 was able to collect 59 cases found 45 instances of embolism and 14 of thrombosis of the aorta. In 1928 Banowitch and Ira<sup>3</sup> found 105 cases and Rothstein<sup>4</sup> was able to collect 123 cases up to 1935. In 1940 Lueth<sup>5</sup> reported that thrombosis of the aorta occurred once in 1,047 necropsies according to the records of the Research and Educational Hospital of Chicago. In our series of 777 necropsies there are four instances; the one recorded above; two in which the thrombi were found in arteriosclerotic aneurysms of the abdominal aorta; and one in a syphilitic aneurysm of the abdominal aorta. The vast majority of reported cases of thrombosis of the aorta are secondary to emboli which lodge at the bifurcation, and primary thrombosis of the aorta is very rare. Welch described one instance of a thrombus filling the entire aorta which originated in the ascending aorta. Probably a considerable number of cases have never been diagnosed because of the small percentage of necropsies done in this country.

Thrombosis and embolism of the aorta may occur at any age and usually are the result of a failing heart and changes in the vessel wall secondary to syphilitic aortitis, to arteriosclerosis or to some infection. Rothstein reported one case in an infant and collected eleven similar cases, the youngest patient being ten days old. The reader is referred to his article for an excellent account of the clinical manifestations of the condition both in infants and adults.

The treatment consists of aortotomy and removal of the embolus or thrombus as soon as the diagnosis is made and the site of the embolus or thrombus is determined, and before the circulatory changes of the lower extremities have progressed to gangrene. While these patients usually are suffering from cardiac disease or some serious infection and may have multiple emboli

and therefore are extremely poor surgical risks, Rothstein reported 32 per cent recoveries in 25 cases subjected to operation, whereas only four of 99 cases survived conservative treatment.



Fig. 1. Photograph of the heart showing the thrombus in the ascending aorta.

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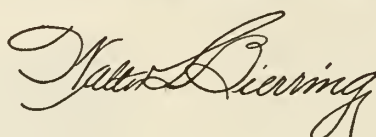
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#### APPOINTMENTS IN THE NAVAL RESERVE

The Surgeon-General of the Navy invites the attention of civilian doctors to the opportunity of becoming commissioned officers of the Medical Corps in the United States Naval Reserve.

Male citizens of the United States, graduates of Class A medical schools, who are under fifty years of age, and who meet the physical and professional requirements, are eligible for these appointments. Applicants desiring appointments in the Medical Corps of the Naval Reserve should communicate with the Commandant, Ninth Naval District, Great Lakes, Illinois, requesting application forms, or they may request literature from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. This literature contains full information regarding classification, promotion, pay, allowances, etc.

# STATE DEPARTMENT OF HEALTH



## THE GUIDING LIGHT

C. K. MCCARTHY, M.D.  
Director Division of Tuberculosis  
Iowa State Department of Health  
Des Moines, Iowa

This year's Christmas Seal, as always, is symbolic of service to mankind. The lighthouse shines forth brightly on the 1941 Christmas Seal. It is showing the way to health and life as a beacon guides ships through fogs and storms.

The medical profession can be likened to a beacon, guiding our path in the way of health. For centuries physicians have strived for the best methods of healing the sick. They have worked unceasingly to give the world the benefit of their skill and knowledge. Hippocrates, Galen, Laënnec, Harvey, Pasteur, Lister and Osler; these names will remain forever a guiding light for the future. The world is infinitely better for these men having lived in it. The medical profession is striving just as hard today to make our lives longer, happier and more useful.

This disease does not make known its coming, like armies with dive bombers and shells. It sneaks upon us like a thief in the night, insidiously, while we sleep. We must fight it hard and mercilessly. It can make great gains before one knows he has been attacked. This makes it more difficult because the person attacked often delays getting medical advice until cure is difficult, if not impossible. The medical profession must take the initiative and lead the way.

Stevan Dohanos, the artist who conceived this year's Christmas Seal, was a young man full of ambition for a long, useful life. Just at the time when he was beginning to be a successful young artist he found that he was a victim of tuberculosis. Couldn't he somehow bungle along and regain his health while still working? The temptation was very great; but guided by the light of education he finally went to Saranac Lake and underwent a long period of rest and treatment. It was during this period that he conceived the idea of the 1941 Christmas Seal. He regained his health and has become a successful painter and illustrator. The lighthouse will continue to send

out its cheery message of safety. What better symbol of guidance could there be to health and life?

## *The Problem of Tuberculosis*

Tuberculosis is still one of our greatest health problems in Iowa, in spite of the great drop in the mortality rate since 1900. Iowa has a most favorable mortality rate, 17.2 per 100,000, as compared with the national average of 47 per 100,000. In spite of this there were 436 deaths from this disease in 1940, a figure of which we should not be proud.

## *Early Diagnosis*

As in all other diseases the earlier the diagnosis is made the better is the patient's chance to arrest the disease. Every effort should be directed to finding the disease at the earliest possible time. The tuberculin test, one of the most sensitive tests we have in medicine, is extremely valuable and would be very helpful if done routinely by every physician on every patient who comes to his office. The State Department of Health will furnish the tuberculin for this purpose without charge. We must also not forget that a negative tuberculin test may be extremely important in the differential diagnosis of other chest conditions.

## *Iowa Case-Finding Program*

The case-finding program in Iowa, sponsored jointly by the Iowa State Department of Health and the Iowa Tuberculosis Association, is beginning its fourth year of operation. Its success must be attributed to the generous support accorded it by the general practitioners in the various counties. The general practitioner is the most important factor in case-finding work in tuberculosis. The State Department of Health is deeply grateful for that support.

The fight against tuberculosis cannot fail with these forces working together and, while we cannot hope to eradicate tuberculosis in the immediate future, by exerting pressure at all times we can continue to keep the mortality curve going in the right direction and keep Iowa "a Healthy State and a Happy People."



# The JOURNAL of the Iowa State Medical Society

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OFFICE OF PUBLICATION, DES MOINES, IOWA

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## THIRD ATTACK ON SMALLPOX IN IOWA BEGINS

In most of the counties of the state plans have been completed for the third annual smallpox prevention campaign which gets under way November 3 and continues throughout the week. Stung by Iowa's disgracefully high smallpox case-rate the Iowa State Medical Society through its Committee on Child Health and Protection in cooperation with the State Department of Health decided three years ago that it was high time something was being done about the situation. In the campaign that year some 70,000 individuals were vaccinated. Last year 42,775 more were added. This year it is hoped the number may be appreciably increased as a result of the educational efforts of the preceding two years.

So far this year only 103 cases of smallpox have been reported to the State Department of Health. What effect the previous two campaigns have had in bringing about this reduction is impossible to say. Probably some, but since it is well known that diseases like smallpox occur in waves, it is more than likely that the small incidence this year merely represents a trough-like position between the waves. The point is that there should not be any cases of smallpox in Iowa this year or any other year!

Whether or not anti-smallpox campaigns of the type being conducted in Iowa will prove adequate to eradicate smallpox from the state over a period of years is something all of us should watch with a great deal of interest. It is difficult to see how a more efficient program could be formulated. County medical societies have supported the project vigorously. Many of them are sponsoring paid

advertisements in their local newspapers. Other papers carry news items about the importance of smallpox prevention and how and where it may be obtained. The aid of local lay organizations has been enlisted. Vaccine is furnished free by the State Department of Health. In short, no stone has been left unturned to give the people of the state an opportunity voluntarily to secure for themselves protection against this totally unnecessary disease. A steady decline in the number of yearly cases reported during the next five to ten years could be accepted as evidence, demonstrating beyond question the efficacy of the annual campaign method in controlling smallpox. On the other hand, failure to observe these results would clearly indicate the necessity of substituting some other method, and this method should be some sort of compulsory vaccination.

As representatives of the medical profession let us put everything we have into the coming campaign in order to make it a convincing demonstration one way or the other. Smallpox can be eradicated either by people voluntarily taking advantage of the opportunities arranged for them or by legislative edict.

## LIQUID PETROLATUM—USE WITH CAUTION

For some time we have intended to comment in these columns on the possible deleterious effects to which large numbers of our population thoughtlessly subject themselves by the injudicious use of liquid petrolatum either as a purgative or as a nasal spray. Our good intentions were turned into action when we read Dr. Morgan's article in the October 18 issue of the *Journal of the American Medical Association*.

Not only does this author condemn liquid petrolatum purgatives from the standpoint of interference with fat soluble vitamin absorption, but he also stresses several other disadvantages. Most startling of his statements is that continued oral administration of liquid petrolatum may result in a disease entity which he calls "mineral oil poisoning," the most frequent symptoms of which are anorexia, indigestion, flatulence, fatigue, nervousness, dyschesia and anal leakage. Weight losses of from ten to sixty pounds and in one instance one hundred pounds were encountered. Recovery occurred promptly after discontinuance of the oil. Dr. Morgan even goes so far as to say that "in some respects liquid petrolatum has earned its niche in the section of toxicology rather than in pharmacology." He maintains that its oral administration may interfere with the healing of

wounds in the anorectal region and may sometimes induce hemorrhage. Furthermore, it occasionally is an indirect cause of pruritis ani due to anal leakage.

While Dr. Morgan limits his indictment of mineral oil to the deleterious effects produced in the intestinal tract, numerous other authors have called attention to the dangers of oil aspiration or lipoid pneumonia. This danger is greatest in old, recumbent or debilitated patients, in those who are vomiting or who have a disturbance in deglutition, as in bulbar palsy, and in infants or young children who are forcefully given doses of oily preparations in spite of their struggling and choking. In this group of patients it makes little difference whether the oil is administered orally or through the nostrils in the form of oily nasal sprays or drops. The results may be equally disastrous.

In view of these arguments the case against the frequent use of mineral oil and mineral oil preparations in the gastro-intestinal tract and the nose would seem to be sufficient to justify physicians to urge "caution" upon their patients—particularly those who are inclined to self-medication.

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#### FIVE YEARS OF INTERPROFESSIONAL PROGRAMS

The medical profession in Iowa has long recognized the value of interprofessional relationships. Local interprofessional associations have been formed in many sections of the state, and many excellent district programs have been presented. These associations have been helpful in solving problems affecting one of the professions, and as a result, the functioning groups have become closely knit and effective.

The Iowa State Interprofessional Association is purposely a loosely organized group, yet it can and does function effectively. Starting in 1938, it has presented four annual programs of outstanding interest. The first program, at which time the nurses acted as hostesses, presented nationally known speakers in a discussion of the National Health Conference; the second, sponsored by the pharmacists, dealt with socialized medicine; the third, held in conjunction with the dentists' annual meeting, featured a talk by a well known dentist; and the fourth, sponsored by the physicians, consisted of panel discussions of Vitamin B and the Sulfonamides.

Next year the veterinarians are to be hosts to this group, and they have already started making plans for the annual meeting. It will be held at the Hotel Fort Des Moines in Des Moines on Tuesday afternoon, January 27, 1942. Tentative

arrangements have been made to procure nationally known speakers on encephalomyelitis and encephalitis, subjects of great interest to all Iowa physicians. Fortunately, Iowa did not suffer from these diseases in epidemic form in 1941, although there were many cases in neighboring states. However, because of the relationship between encephalomyelitis in animals and encephalitis in human beings, Iowa doctors will be greatly interested in a discussion by authorities in this field.

The complete program for this Fifth Interprofessional Meeting will be published later, but in the meantime Iowa physicians should keep the date of January 27 in mind and plan to attend this presentation.

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#### FEDERAL LEGISLATION NOW PENDING\*

Readers of the JOURNAL will be interested in the following information concerning federal legislation which vitally affects the medical profession. This is the status of the various bills as we go to press.

*New Building for Army Medical Library:* H. R. 5146 authorizing an appropriation of \$4,750,000 to construct a new building for the Army Medical Library and Museum. Approved by the President September 24.

*Deferment of College and University Students Under the Selective Training and Service Act:* H. R. 5635 introduced by Representative M. J. Kennedy of New York, September 11. Pending in the House Committee on Military Affairs.

*Osteopathic Internes for Army Hospitals:* H. R. 4476 passed the House July 21. Provides for the employment in the Medical Department of internes who are graduates of or have successfully completed at least four years' professional training in reputable schools of medicine or osteopathy, at not to exceed \$720.00 per annum.

*Chiropractors and the United States Employees' Compensation Act:* Representative Tolan of California introduced on January 3 a bill, H. R. 1052, to permit chiropractors to treat beneficiaries of the United States Employees' Compensation Act. The bill is identical with a bill introduced by the same congressman in the Seventy-sixth Congress, H. R. 8963, on which hearings were held but no further action taken. The pending bill was referred to the House Committee on the Judiciary and by it referred to a subcommittee of which Representative Charles F. McLaughlin of Nebraska is chairman. On August 19 Senator Murdock of Utah, for himself and Senator Gillette of Iowa, intro-

\*From the Committee on Public Policy and Legislation.



duced a companion bill in the Senate, S. 1861. This bill was referred to the Senate Committee on the Judiciary of which Senator Van Nuys of Indiana is chairman.

### PHYSICAL REHABILITATION OF REJECTED DRAFTEES\*

The *Journal of the American Medical Association* in its issue of October 18 carried an editorial on the president's plan for physical rehabilitation of rejected draftees, and actual features of the plan were given in detail in the medical preparedness section.

Rehabilitation of draftees has been under way in Iowa since the first of August. At that time, the National Youth Administration offered its services to the selective service system in Iowa in a program to rehabilitate all draftees under twenty-four years of age. Under this program the rejected youths were sent to the NYA physician in their county for a physical examination and to determine whether or not the youth could pay for his own rehabilitation. If the physician believed the defects were remediable, he asked the draftee to go to his own physician. If the draftee was unable to pay for his medical care, he was sent to one of three NYA centers in Iowa where the medical service was given to him at NYA expense.

It appears that the president's plan will provide medical care at government expense to all draftees having remediable defects. Medical service is to be provided by the family physician and dental service by the family dentist; the cost for such care is to be supplied from federal funds. The selective service system will then accept such youths for military service. The question was raised as to whether the draftees would voluntarily submit to such rehabilitation. President Roosevelt seems to have obtained legal opinions that the draftee is under the authority of the Selective Service Board and so could be compelled to undergo the necessary treatment.

Present figures show that about one million youths have been rejected because of physical defects. Of these, about 200,000 are capable of rehabilitation. The selective service report itemizes the following as causes for rejection:

Dental defects .....	20.9 per cent
Defective eyes .....	13.7 per cent
Cardiovascular diseases .....	10.6 per cent
Musculoskeletal defects .....	6.8 per cent
Venereal diseases .....	6.3 per cent
Mental and nervous diseases.....	6.3 per cent
Hernia .....	6.2 per cent
Defects of ears.....	4.6 per cent
Defects of feet.....	4.0 per cent
Defective lungs, including tuberculosis.....	2.9 per cent
Miscellaneous .....	17.7 per cent

\*From the Committee on Medical Preparedness.

### LABORATORIES AND SEROLOGIC TESTS

The Iowa premarital law provides that serologic tests shall be "made by the State Hygienic Laboratory of the State Department of Health or by such other laboratories which are approved by the State Department of Health." In order to have some basis upon which to approve laboratories for serology, a joint committee representing laboratory directors and the State Department of Health has formulated preliminary plans for a survey of laboratories in Iowa. Laboratories will be rated on ability to perform tests on approximately 200 unknown specimens. Directors and personnel must meet minimum qualification standards approved by the Department. Subsequent to approval, which will be on an annual basis, the laboratory will be required to perform tests at rather frequent intervals and continued approval will be based on satisfactory performance of the most recent 200 tests. The laboratory may choose to be rated on any of the tests currently being run at the State Hygienic Laboratory. Laboratory directors may secure further information from the Division of Venereal Disease Control, Iowa State Department of Health, Des Moines, Iowa.

### PSYCHOLOGIC EFFECTS OF "BLITZ" WARFARE

The Salmon Committee on Psychiatry and Mental Hygiene each year chooses an outstanding specialist in this field for the Salmon Memorial Lecture. The lectures this year will be delivered by Dr. R. D. Gillespie of the British Royal Air Force, who has received special leave of absence for the express purpose of making a first-hand report to members of the medical profession in America on the psychologic effects of "blitz" warfare on civilians and armed forces.

Among Dr. Gillespie's many important findings on this subject is the fact that chronically neurotic people and those suffering from mild depressions have become chronically heroic and self-sacrificing under the stress of bombing raids. He has also noted that women stand up as well, if not better, than men under civilian bombings. Dr. Gillespie's observations, made under actual war conditions, are expected to be extremely valuable to American psychiatrists in formulating plans for maintaining civilian morale in case of emergency.

Starting from New York November 17, Dr. Gillespie will make a two-weeks tour, speaking in Boston, Philadelphia, Toronto, Chicago, San Francisco and New Orleans. His address in Chicago is scheduled for Friday, November 21, under the auspices of the Chicago Neurological Society, the Illinois Psychiatric Society and the Chicago Institute of Medicine. Iowa physicians are cordially invited to attend this session.

## Europe's War Victims Aided by Red Cross

During the height of the air bombardment of London the headquarters of the American Red Cross in that city received an S.O.S. It came from the Women's Voluntary Services, British civilian relief organization: "Can you find us 20,000 hot-water bottles with covers, at once?"

Twenty thousand hot-water bottles was easy enough. But covers! No manufacturer had them in stock, and none would undertake to produce that number at short notice. Yet they were promptly forthcoming. There are in the United States more than 1,000,000 volunteer workers, grouped in more than 3,700 chapters. They were told the British need. Within a month 20,000 hot-water bottles, complete with covers, all hand made by these volunteers, were in the hold of an east-bound ship.

When a town is badly "blitzed" it sometimes happens that its lighting plant is put out of commission. To be plunged into darkness amid the din of bombardment is, to say the least, unpleasant; but for the surgeon it may be heart-breaking and for his patient it may mean death. A cable flashed to Washington "Thirty mobile x-ray units." Back, within an hour, went the authorization. A week later thirty crates swung down into a hold of a ship loading at Jersey City for a British port.

The range of medical supplies that flow from the vast cornucopia of the American Red Cross embraces every kind of medical requirement. There are 152 motor ambulances now in service bearing the American Red Cross symbol. More than 1,500,000 items of hospital equipment, exclusive of 155,000 hospital garments, have been distributed. Through the organization's New York warehouse, thousands of coats and raincoats have been routed to England, as well as thousands of sets of infants' layettes.

To the American Red Cross came this request: "We need kits to enable us to handle childbirths in air raid shelters during bombardment." No less than 5,000 kits for this purpose were requested. Soon American volunteers were busy at their new task. Today these kits are known as Stork Satchels.

For air raid shelters, also, are the 20,000 warm overalls, with cloaks and hoods, for children taken from warm beds to a place of comparative safety below ground.

When a special request for 120,000 layettes had been filled, there came another demand. "The layettes are excellent, and many thanks for them; but what about our toddlers? Is there anything for them?" So, the next job was Toddler's Packs.



They contain every essential item for a small child separated from its nursery.

When the American Red Cross receives by cable or trans-Atlantic telephone a call for relief supplies, the decision is given with the least possible delay. The goods are collected, stored in the New York area warehouse, then shipped direct as soon as possible. For purposes of distribution England is divided into thirteen zones. London, because of its monster size, gets one-fourteenth of the total allocation. The system works smoothly and without hitch, and is 100 per cent efficient. Eaton Square, London, is one of those residential quarters that still breathe the air of dignity and ease of a vanished era. Here the great ones still have fine houses, and, among others, it is here one finds the London home of Lord Halifax, British Amba-

sador to the United States. Today this fine old house is the head depot for the distribution of an unending stream of relief equipment and commodities. If washing flutters in the breeze today in London's most exclusive square it is merely because some part of a Red Cross consignment from America has become damp in transit.

Up to the present time the vast bulk of this American aid has taken the form of goods and gear. For example, nearly 100,000 pounds in cash, approximately \$400,000, has been contributed for war nurseries and nursing centers and for convalescent homes for bombed out children. They have been largely staffed by English personnel. Now this impulse to serve is finding expression in personal service. American nurses are already at work in England, and very soon the Red Cross-Harvard Hospital, now being erected to afford a better study of epidemic diseases in war-time, will be in operation. It will be staffed by doctors, nurses and technicians from the United States.

The chapters at home are also busy helping, through public health activities, teaching first aid, home nursing, nutrition and other subjects, to strengthen our country internally. All this work at home is supported from low membership dues received during the annual Roll Call. Because of the great expansion that has taken place in Red Cross services, millions of new members are needed this year. Every American is invited to join his or her local Red Cross chapter during the membership campaign which takes place from November 11 to November 30, and thus have a part in Red Cross defense services.



# SPEAKERS BUREAU ACTIVITIES

## FALL MEETINGS

During the fall months the Speakers Bureau has been busily engaged in carrying on its various activities. In addition to the radio talks, postgraduate medical lectures and scientific transcriptions, for which November schedules will be found on this page, arrangements have been made for nineteen lay talks to be given during November to service clubs and parent-teacher groups. More lay talks and scientific recordings will, of course, be scheduled during the month as requests are received.

To date thirty recorded lectures have been sent out for medical meetings over the state, thirteen of which were used during September and October. Several of the groups have had two or more of the recordings and four of them have requested the entire series. Various comments received from these

groups assist materially in perfecting this means of promoting postgraduate medical education. New recordings by nationally known men will be added to this library during the next two months.

## RADIO SCHEDULE

WOI—Wednesdays at 2:05 p. m.

WSUI—Fridays at 9:15 a. m.

Nov. 5-7 Whooping Cough

Charlotte Fisk, M.D.

Nov. 12-14 Medical Preparedness

Thomas F. Suchomel, M.D.

Nov. 19-21 Physical Education

W. W. Tuttle, Ph.D.

Nov. 26-28 Nutrition and Health

P. Mabel Nelson

## POSTGRADUATE MEDICAL LECTURES FOR THE MONTH OF NOVEMBER

Davenport Lend-a-Hand Club 6:00 p. m.	November 4	A Discussion of War Wounds Kellogg Speed, M.D., Chicago
Marshalltown Hotel Talcorn 6:00 p. m.	November 4	Chest Injuries Jerome R. Head, M.D., Chicago
Newton Skiff Memorial Hospital 6:30 p. m.	November 4	Diseases of the Blood Willis M. Fowler, M.D., Iowa City
Ottumwa Hotel Ottumwa 6:30 p. m.	November 4	Making A Neurological Examination in General Practice Paul C. Bucy, M.D., Chicago
Newton Skiff Memorial Hospital 6:30 p. m.	November 11	Diagnosis and Treatment of Pneumonia Horace M. Korns, M.D., Iowa City
Toledo Community Hall 6:30 p. m.	November 13	Recent Treatment of Pneumonia John W. Caldwell, M.D., Des Moines
Jefferson Greene County Hospital 6:30 p. m.	November 13	Making A Neurological Examination Harold F. Buchstein, M.D., Minneapolis
Boone Holst Hotel 6:30 p. m.	November 13	Therapeutic Value of X-Ray Arthur U. Desjardins, M.D., Rochester
Spirit Lake Antlers Hotel 6:30 p. m.	November 18	Management of Obstetric Difficulties Wilbur C. Thatcher, M.D., Fort Dodge
Ottumwa Hotel Ottumwa 6:30 p. m.	November 18	Common Diseases of the Ear, Nose and Throat Walter Kirch, M.D., Des Moines
Newton Skiff Memorial Hospital 6:30 p. m.	November 18	Acute Surgical Conditions in the Abdomen in Childhood Frank R. Peterson, M.D., Iowa City
Red Oak Hotel Johnson 6:30 p. m.	November 18	Treatment of Heart Failure Daniel J. Glomset, M.D., Des Moines
Carroll St. Anthony Hospital 6:30 p. m.	November 20	Common Diseases of Childhood Frederic W. Schultz, M.D., Chicago
Newton Skiff Memorial Hospital 6:30 p. m.	November 25	Diagnosis and Treatment of Common Conditions of the Ear, Nose and Throat Dean M. Lierle, M.D., Iowa City

## SCIENTIFIC RECORDINGS SCHEDULED FOR THE MONTH OF NOVEMBER

Spirit Lake Spirit Lake Hospital Evening Meeting	November 3	Care of the Premature Infant Julius H. Hess, M.D., Chicago
Cedar Falls Sartori Hospital 6:30 p. m.	November 4	The Making of a Diagnosis David P. Barr, M.D., St. Louis
Bloomfield 7:00 p. m.	November 7	The Diagnosis of Poliomyelitis John A. Toomey, M.D., Cleveland
Spirit Lake Spirit Lake Hospital Evening Meeting	November 10	Diseases of the Gallbladder R. Russell Best, M.D., Omaha
Cherokee Sioux Valley Hospital 8:00 p. m.	November 11	The Making of a Diagnosis David P. Barr, M.D., St. Louis
Sac City Park Hotel 6:30 p. m.	November 20	Office Gynecology Joseph L. Baer, M.D., Chicago

## WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*  
5822 North Waterbury Road, Des Moines

*President*—MRS. W. R. HORNADAY, Des Moines

*President Elect*—MRS. F. W. MULSOW, Cedar Rapids

*Secretary*—MRS. M. J. MOES, Dubuque

*Treasurer*—MRS. A. E. MERKEL, Des Moines

### FALL EXECUTIVE BOARD MEETING

On Friday, October 3, seventeen members of the executive board of the Woman's Auxiliary to the Iowa State Medical Society met at the Grace Ransom Tea Room in Des Moines for luncheon and a business session. Members present were Mesdames W. R. Hornaday, F. W. Mulsow, M. J. Moes, J. F. Veltman, Isaac Sternhill, Fred Moore, E. T. Warren, A. G. Felter, E. J. Harnagel, H. I. McPherrin, H. F. Clark, Daniel Glomset, W. A. Seidler, E. L. Bower, T. B. Throckmorton, W. W. Bond and S. S. Westly.

Reports of officers were given and plans for the coming year were discussed. As a cooperative measure in the national defense program, the Public Relations Committee suggested that doctors' wives learn the basic principles of first aid. The committee also advised the support of legislation making vaccination compulsory for all children entering public schools. Iowa was second last year in the United States in the number of reported cases of smallpox.

Mrs. Felter, chairman of the Program Committee, presented a timely subject for program material for this year's auxiliary use. The outline is entitled, *The Doctor's Wife and National Defense* and was published in full in the October JOURNAL.

Mrs. Warren, chairman of the Revisions Committee, called attention to a few changes in the auxiliary constitution which the committee was considering. These would be presented in due form at the next Executive Board meeting and then presented to the members for final action.

The Press and Publicity Committee chairman, Mrs. McPherrin, stressed the importance of the Auxiliary News section of the JOURNAL as a medium of information and news for officers and members. She solicited the continued cooperation of the executive committee and urged auxiliary presidents to see that accounts of their meetings were available for publication.

The reports of the Legislative, Hygeia and Health Essay Contest Committees were given and are published under separate headings in this issue.

A new system of awarding the Gertrude Downing trophy cup was discussed. Some change had been deemed advisable by the donor and the preceding president, Mrs. E. T. Warren. At this meeting a

new plan was adopted, details of which are included elsewhere in this issue.

The importance of the *Bulletin*, the publication of the Woman's Auxiliary to the American Medical Association, was stressed by Mrs. Throckmorton of that committee. She urged officers especially to subscribe for it since it contains all plans and proceedings of the National Auxiliary organization.

A statewide auxiliary project was suggested by our president, Mrs. Hornaday, some objective that would serve as a unifying agency and a service accomplishment for doctors' wives. With such an aim in mind, the Executive Board voted to sponsor an educational loan fund for upper class student nurses in any recognized training school in Iowa. More information about this project will be published later as detailed plans are evolved.

County auxiliary plans were discussed by local presidents in attendance.

A nominating committee composed of Mrs. Fred Moore, Mrs. J. C. Decker, Mrs. William S. Reiley, Mrs. Russell Doolittle, and Mrs. K. M. Chapler was named and the meeting adjourned.

### NATIONAL PRESIDENT TO BE IN DES MOINES

It will be of interest to auxiliary members throughout the state that the president of the Woman's Auxiliary to the American Medical Association, Mrs. R. E. Mosiman, of Seattle, Washington, will be a guest of the Polk County Auxiliary at its meeting to be held in November. This meeting will be a luncheon followed by an address by Mrs. Mosiman, and will be held Monday, November 17, at the Hotel Fort Des Moines at one o'clock. Reservations may be made with Mrs. W. W. Bond, 5617 Waterbury Circle, Des Moines, Iowa, and any auxiliary member may attend.

### HEALTH ESSAY CONTEST

The Ninth Health Essay Contest sponsored by the Woman's Auxiliary and the Speakers Bureau to the Iowa State Medical Society opened October 20. The subject "Health, Strength and Beauty" affords the boy and girl opportunities for a study of their



own immediate personal problems. For eight years we have stressed participation in this contest as a health education project in the high schools of the state, and we feel that it has been most worthwhile. Last year thirty-eight counties were represented. Several hundred students spent their time in the study of the subject and as a result were capable of sharing their knowledge with others. This is your responsibility. Will you do your best to make it the best contest of all?

Mrs. W. A. Seidler, Chairman  
Health Essay Contest.

#### DR. W. W. BAUER IN DES MOINES NOVEMBER TWELFTH

Dr. W. W. Bauer, director of Health Education of the American Medical Association, and associate editor of *Hygeia*, will be in Des Moines Wednesday, November 12, for a series of talks. At 9:00 a. m. he will address Drake students and faculty members in the Drake lounge and at 11:00 a. m. he will be the speaker for the Des Moines Women's Club at Hoyt Sherman Place. In the afternoon he will talk before students at East High, and at six o'clock he will address a dinner meeting which will be sponsored by four business women's groups of Des Moines.

#### REPORT OF HYGEIA COMMITTEE

Dr. Van Etten in the opening session of the American Medical Association in New York said "Organized medicine will not fulfill its functions as protector of public health unless it continues its educational work. People are eager for health information and the doctors should give it to them and answer those who would substitute mass medicine." The Auxiliary is helping to do just that when it promotes wider circulation of *Hygeia*.

The Council on Foods and Nutrition of the American Medical Association has worked some years on the various aspects of the problem of nutrition, especially in relation to the nutritional qualities of foods in general use and of the effects on these qualities of the various methods of processing, distribution and preparation of foods. Interesting articles on these questions have appeared in *Hygeia* during recent years. In every issue there is valuable information on nutrition and on other health problems. *Hygeia* has published articles giving authentic information on the care of the eyes and teeth. Wider dissemination of such knowledge would do much toward the prevention of these two major defects with respect to national health.

The main objective of *Hygeia* has been health education for the purpose of building a more healthful and, therefore, a stronger and more efficient nation. Lay women's organizations are focusing their attention on problems of health for defense. It is our responsibility as wives of doctors to refer them to *Hygeia* where they can get the authentic information from experts. Moreover the leaders in

many of these organizations are looking to the Woman's Auxiliary for help in this regard.

May we repeat our request of last year, that we have better *Hygeia* organizations in every county auxiliary, with each member doing her part in the only way that counts—getting subscriptions.

The sum of \$400.00 will be given by *Hygeia* in cash prizes to the Auxiliary securing the largest number of subscription credits to *Hygeia* during the contest which began September 1, 1941 and will end January 31, 1942. If each Auxiliary will do its share according to members, it should be easy to bring the total credits for 1941 far above the 142 2-12 we received last year.

Mrs. H. F. Clark

#### NEW AWARD BASIS FOR GERTRUDE DOWNING CUP

A new basis of award for attaining the Gertrude Downing trophy cup was decided upon at the Fall Executive Board meeting. Previously the cup had been awarded to the Auxiliary making the greatest percentage of gain in membership. However, with so many objectives necessary for the maintenance of a well-organized and effective Auxiliary, it was decided to change the requirements for winning the award. It is now to be determined upon a point system, with a certain number of points for each goal, the total equaling 100. The cup will be given to the Auxiliary earning the highest number of points. Following is a list of objectives and points received for attaining same:

Beginning September 1, 1941.....Ending April 10, 1942  
Award: The Gertrude Downing Cup  
Judging Standards: All ratings based on membership percentage at beginning of year.

To Win: Small organizations have as good a chance as large ones. List of credits for award to County Auxiliary for outstanding achievement.

- |   |           |
|---|-----------|
| 1. State and national dues paid by March 15, 1942   | 5 points  |
| 2. Advisory Council from local medical society  | 5 points  |
| 3. All communications pertaining to Auxiliary work answered immediately   | 5 points  |
| 4. Names of newly elected officers sent immediately to state president  | 5 points  |
| 5. Written report of year's work sent to state president by April 10, 1942  | 5 points  |
| 6. Delegate representation and report of year's work at state meeting   | 5 points  |
| 7. At least one health program during year in own Auxiliary   | 10 points |
| 8. Provide speakers on health subjects for lay groups (P. T. A., church groups, Women's Clubs, etc.,)   | 10 points |
| 9. Active participation in some project for community betterment such as Cancer Control, Red Cross, First Aid Classes, Tuberculosis Control, etc. | 10 points |
| 10. Active participation in civic organizations such as Girl Scouts, Camp Fire, Boy Scouts, Y.M.C.A.  | 5 points  |
| 11. Increase in <i>Hygeia</i> subscriptions based on membership at beginning of year  | 5 points  |
| 12. Gift of <i>Hygeia</i> to local school, library, etc.  | 5 points  |
| 13. Increase in membership (percentage basis)   | 10 points |
| 14. Prompt dispatch of reports to chairman of Press and Publicity for publication on News Page  | 5 points  |
| 15. Subscription to <i>National Bulletin</i>  | 5 points  |
| 16. Representation of your county in Essay Contest. Five points for each school from your county whose papers reach Essay Committee               | 10 points |
| 17. Cooperation and financial support of our Auxiliary project (To be decided upon at Board Meeting)  | 10 points |
| 18. Clippings, items and pictures sent to Exhibits Chairman, Mrs. F. P. Winkler of Sibley   | 5 points  |
| 19. Joint meeting with doctors  | 5 points  |
| 20. Invite doctors' wives from adjoining county for at least one meeting  | 5 points  |

## Back Numbers of Hygeia

Members of the Auxiliary are urged to secure old copies of *Hygeia* to place in the libraries of high schools in the state who do not have subscriptions to the magazine for the current year. Many references for the 1942 Health Essay Contest are to be found in previous issues of *Hygeia*, and these back numbers will also be valuable for other purposes.

A large percentage of Iowa physicians have *Hygeia* on the tables in their waiting rooms. Auxiliary members will be rendering a real service to the high schools, the students, and lay circles in general, if these magazines are placed in high school libraries instead of discarded.

**FOOD FOR THOUGHT FROM  
THE NUTRITION CONFERENCE**

Why Not Give Yourself a Break? Are you

Efficient?  
Attractive?  
Full of pep?  
Healthy and well?  
Always on the job?

Your success and your job depend on your being so, and these essential qualities depend primarily on your good health. Good health does not come by chance, it takes effort. Are you giving yourself a break?

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**Dallas-Guthrie Auxiliary**

The Woman's Auxiliary to the Dallas-Guthrie Medical Society met Thursday, October 16, at the Presbyterian church in Panora. After luncheon with the doctors at 12:30 p. m. the group adjourned to hear Mrs. W. R. Hornaday of Des Moines, state president, discuss State Auxiliary Plans for 1941-1942.

Mrs. K. M. Chapler, Secretary

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**Greene County**

The Woman's Auxiliary to the Greene County Medical Society met Thursday, October 9, at the Lincoln Hotel in Jefferson for a dinner meeting. Mrs. W. R. Hornaday of Des Moines, state president, was guest of honor and spoke in detail on plans for the coming year.

Mrs. P. E. Lohr, President

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**Pottawattamie County**

Mrs. J. M. Moskovitz of Council Bluffs furnished the program for the Woman's Auxiliary to the Pottawattamie County Medical Society when that group met in Council Bluffs Monday, October 20, at the Hotel Chieftain. Her paper was on Nutrition.

Mrs. I. Sternhill, Publicity Chairman

**BOOK NOTES**

On every hand we are faced with conversation and activity concerning national defense so that reading about it is more work than pleasure. However, a most unusual analysis of *The Neuroses In War* edited by Emanuel Miller, member of the Royal College of Physicians of England, is a practical volume in which twelve illustrious British physicians discuss the neuroses which are likely to occur among soldiers, workers and families during war time.

Also, from the war angle, is Major H. Ralph's (M.D.) excellent book entitled *Fatal Partners: War and Disease*. He traces the alliance of war and disease from the fall of the Athenian Empire to the current crisis in which the whole world has become a proving ground for preventive medicine. Those who enjoyed *Rats, Lice and History* and *Microbe Hunters* will delight in this new volume.

Large print is essential for tired eyes, and now an adequate list of books in large type prepared by Charlotte Matson and Dorothy Wurzburg is available through the American Library Association at Chicago. Covering both fiction and non-fiction for adults and juveniles, this eighty-page booklet, *Books For Tired Eyes*, will prove a boon to many.

Where, oh where, is the woman who does not want to be beautiful? It can be done scientifically according to J. H. Crum, M.D., author of *The Truth About Beauty*. Common-sense home methods which are safe and effective can provide the pathway. Ladies, here is your opportunity!

Is Father the forgotten man at your house? If so, whose fault is it? The answer may be found in *The Parents' Manual* by A. M. W. Wolf along with chapters on punishment, habit and problem parents.

A very new book entitled *Behind the Mask of Medicine* by Miles Atkinson, M.D., is concerned with the part which medicine plays in modern life. The doctor examines the patient and the patient examines the doctor. Dr. Atkinson goes into the fads and fallacies and the failures and triumphs of medicine. Conversational in style, this book is pleasant and easy reading.

Mrs. Keith M. Chapler

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**SPEAKERS BUREAU  
RADIO SCHEDULE**

WOI—Wednesdays at 2:05 p. m.

WSUI—Fridays at 9:15 a. m.

Nov. 5- 7 Whooping Cough

Charlotte Fisk, M.D.

Nov. 12-14 Medical Preparedness

Thomas F. Suchomel, M.D.

Nov. 19-21 Physical Education

W. W. Tuttle, Ph.D.

Nov. 26-28 Nutrition and Health

P. Mabel Nelson



## SOCIETY PROCEEDINGS

### Cerro Gordo County

The regular meeting of the Cerro Gordo County Medical Society was held Tuesday, October 14, at the Hotel Hanford in Mason City. The guest speaker, Lloyd H. Mousel, M.D., of Rochester, Minnesota, spoke on Recent Developments in Anesthesia.

C. O. Adams, M.D., Secretary

### Chickasaw County

On Wednesday, November 5, the Chickasaw County Medical Society will entertain R. Russell Best, M.D., associate professor of surgery, University of Nebraska College of Medicine, Omaha, at a meeting to be held in New Hampton. Dr. Best will speak on The Causes of Continued Disability Following Cholecystectomy: Management.

N. Schilling, M.D., Secretary

### Hardin County

Hiram B. Henry, M.D., of Des Moines, furnished the scientific program for the Hardin County Medical Society meeting held Tuesday, September 30, at the Princess Cafe in Iowa Falls. The subject of his address was Encephalitis.

W. E. Marsh, M.D., Secretary

### Jackson County

The Jackson County Medical Society met Thursday, September 11, at the home of Dr. William Lowder in Maquoketa. Dr. John J. Tilton of Maquoketa was appointed secretary and treasurer to fill the vacancy caused by the death of Dr. George C. Ryan.

### Johnson County

The first meeting of the fall season for the Johnson County Medical Society was held at the Jefferson Hotel in Iowa City Monday, September 29. After the dinner and business meeting the following program was presented: The Nutrition Program in National Defense, Kate Daum, Ph.D., Iowa City; and Physicians and Elementary Education, George C. Albright, M.D., Iowa City. Discussers of the two papers were Drs. H. K. Newburn and W. R. Miller, both of Iowa City.

### Jones County

Members and guests of the Jones County Medical Society met at the McDonald Hospital in Monticello Tuesday, September 30. Guest speaker of the occasion was F. E. Schmidt, M.D., of Chicago, who presented discussions on Postencephalitic Parkinson's Disease, Scarlet Fever and Pernicious Anemia, illustrated by three moving picture reels.

### Linn County

The next meeting of the Linn County Medical Society will be held Thursday, November 13 in Cedar Rapids. Guest speaker will be Arlie R. Barnes, M.D., of the Mayo Clinic, Rochester, Minnesota, who will conduct a clinic on Cardiac Cases.

### Louisa County

The annual meeting of the Louisa County Medical Society was held at the Methodist Church in Wapello, Thursday, October 9. The program consisted of talks by Clyde A. Boice, M.D., of Washington, councilor for the district, and John P. Mathias, M.D., of Indianapolis, and motion pictures by Carl J. Lohmann, M.D., of Burlington. Officers elected at the business meeting are Dr. Kyle T. DeYarman of Morning Sun, president; Dr. Ola A. Kabrick of Grandview, vice president; and Dr. John H. Chittum of Wapello, secretary and treasurer.

### Polk County

The next meeting of the Des Moines Academy of Medicine and Polk County Medical Society will be held in Younkers Tea Room in Des Moines, Wednesday, November 12. After a seven o'clock dinner William Parry Murphy, M.D., of Boston, will address the group on The Treatment of Anemia.

### Sac County

The Sac County Medical Society met at the Park Hotel in Sac City Thursday, September 25. Guest speaker was Howard I. Down, M.D., of Sioux City, whose subject was Some of the Newer Aspects of Treatment of Appendicitis.

W. I. Evans, M.D., Secretary

### Wapello County

Vitamin Deficiency: Symptoms and Treatment was discussed by Clifford J. Barborka, M.D., of Chicago, for the members of the Wapello County Medical Society at a meeting held in Ottumwa Tuesday, October 7. The program followed the usual six-thirty dinner.

### Washington County

The members of the Washington County Medical Society, their wives and guests, held their annual turkey dinner, Tuesday, September 30, in Wellman. Paul Fry, son of Dr. and Mrs. J. L. Fry of Kalona gave several selections on the harp. Mr. Arthur F. Briese of Chicago was the speaker of the evening.

W. S. Kyle, M.D., Secretary

### Woodbury County

Willis M. Fowler, M.D., associate professor of medicine, State University of Iowa, College of Medicine, Iowa City, presented a lecture on Sulfonamides for members of the Woodbury County Medical Society at their meeting held Thursday, October 23, at the Martin Hotel in Sioux City.

W. K. Hicks, M.D., Secretary

### Sioux Valley Medical Society

The annual meeting of the Sioux Valley Medical Society will be held December 3 and 4, 1941 at the Hotel Martin in Sioux City. In addition to regularly scheduled scientific sessions and business meetings, preliminary plans indicate that special events have been planned for the wives of members.

Officers of this group include Dr. E. A. Kilbride of Worthington, Minnesota, president; Dr. R. S. Westaby of Madison, South Dakota, vice president; Dr. Roy E. Crowder of Sioux City, Iowa, secretary; and Dr. Frank P. Winkler of Sibley, Iowa, treasurer.

### PERSONAL MENTION

Dr. Charlotte Fisk, instructor in pediatrics at the University of Minnesota Medical School for the past three years, is practicing her specialty in Des Moines, in association with Dr. James E. Dyson. Dr. Fisk was graduated from the State University of Iowa, College of Medicine, Iowa City, in 1932 and has done postgraduate work in pediatrics at the University of Rochester School of Medicine, Rochester, New York.

Dr. Howard V. Turner has recently become a member of The Retreat staff in Des Moines. Dr. Turner was graduated in 1938 from the St. Louis University School of Medicine and served his internship at the Baltimore Marine Hospital. For the past two years he has been connected with the United States Public Health Service.

Dr. Edward M. Myers of Boone has recently been appointed by the State Board of Control as superintendent of the Woodward State Hospital, to fill the vacancy created by the resignation of Dr. Charles E. Irwin. Dr. Myers has practiced in Boone for the past forty years.

Dr. Harold W. Morgan of Mason City addressed the Garner Lions Club, Wednesday, October 1, on "Cancer", illustrating his talk with slides.

Dr. Sidney Brownstone of Clear Lake, formerly of Oakdale, spoke on "The State Sanatorium at Oakdale" for members of the Clear Lake Rotary Club, Thursday, September 11.

Dr. Earl R. Leonard who has practiced for several years at Lake Park, has moved to Rock Rapids where he has established an office.

Dr. Samuel Cogan, formerly of Picher, Oklahoma, has arrived in Clarinda where he will be on the medical staff at the Clarinda State Hospital.

Dr. Diedrich J. Haines of Des Moines was guest speaker for the Colfax Women's Club, Tuesday, October 14. He spoke on "The Heart and Its Diseases".

Dr. Caryl L. Nelson, for several years a practicing physician and surgeon in Waterloo, has moved to Sandwich, Illinois, where he has opened an office.

Dr. Ambrose J. Callaghan who has been practicing at Pocahontas has been appointed a member of the medical staff at the Cherokee State Hospital.

### MARRIAGES

Miss Alta Patricia McDevitt of Spokane, Washington, and Dr. Kenneth L. McGuire of Richland were married Thursday, October 9, at the home of the bridegroom's parents, Dr. and Mrs. Roy McGuire of Fairfield. Dr. and Mrs. McGuire left immediately for Richland where Dr. McGuire has just established himself in the practice of medicine.

The marriage of Miss Ethel Koelzer of LeMars and Dr. Cornelius B. Murphy of Alton took place Monday, September 15, at St. John's Catholic Church in Jordan, Minnesota. After a short wedding trip the couple returned to Alton where Dr. Murphy has been practicing for several years.

### DEATH NOTICES

Ficke, Emil Otto, of Davenport, aged sixty-one, died October 7 following an operation. He was graduated in 1903 from the University of Illinois College of Medicine, Chicago, and for many years was a member of the Scott County Medical Society.

Hope, Frank George, of Sioux City, aged fifty-eight, died suddenly October 13 after a heart attack. He was graduated in 1906 from the Sioux City College of Medicine, and at the time of his death was a member of the Woodbury County Medical Society.

Wright, Howard Jesse, of Des Moines, aged seventy, died September 30 of injuries received in an automobile accident. He was graduated in 1901 from Drake University College of Medicine, Des Moines, and had long been a member of the Polk County Medical Society.



# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. TOM B. THROCKMORTON, Des Moines

DR. JOHN T. MCCLINTOCK, Iowa City

DR. WALTER L. BIERRING, Des Moines

DR. R. T. LENAGHAN, Clinton

DR. HENRY G. LANGWORTHY, Dubuque

## The Medical History of Palo Alto County

*Prepared by*

CLARA ANTOINETTE RASMUSSEN, B.A.

Ruthven, Iowa

(Continued from last month)

Powers, Henry Roberts; M.D., M.M.Sc. Born at Emmetsburg, Iowa, October 15, 1892; graduated from High School, Emmetsburg, 1910; B.A., State University of Iowa, 1915; M.D., Rush Medical College, Chicago, 1919; interne, Cincinnati General Hospital, 1919-1920. Practiced at Emmetsburg January 1920 to October 1922; postgraduate in surgery, University of Pennsylvania; Master of Medical Science, 1924; chief resident in Philadelphia Hospital, 1924. Private practice at Emmetsburg, Iowa, January 1925 to the present time. Married July 16, 1926, to Marian Conrey in Philadelphia, Pennsylvania. Member A. F. and A. M.; president of Palo Alto County Medical Society; past president of the Upper Des Moines Medical Society; president of Hospital Staff, Emmetsburg, Iowa, 1940.

Scott, Phil A.; M.D. Born at Emmetsburg, Iowa, 1896; graduated from High School, Emmetsburg; B.A., Cornell College, 1919; M.D., Rush Medical College, Chicago, 1922; served as assistant in department of pathology at Rush Medical College; interne, St. Luke's Hospital, Chicago; head of clinical laboratories and department of pathology at Tacoma General Hospital, Tacoma, Washington, 1923 to 1928; assistant in Henry Ford Hospital, department of surgery and urology, 1928 to 1931. Private practice in Tulsa, Oklahoma, 1932 to 1934. Practice in Emmetsburg, Iowa, 1934 to 1936. Associated in practice with Dr. Don Rodawig, Spirit Lake, Iowa, 1936 to the present time.

Nelson, Paul O.; M.D. Born at Cherokee, Iowa, August 8, 1893; graduated from High School, Emmetsburg, Iowa, 1912; B.S. and M.D., State University of Iowa, 1919; interne, St. Louis City Hospital, St. Louis, Missouri, one and one half years; served eight months at Oakdale Hospital, Oakdale, Iowa. Practiced at Ayrshire, Iowa, 1920 to 1937. Private practice at Emmetsburg,

Iowa, 1937 to the present time. Present secretary of the Palo Alto County Medical Society. Married Eva Whirry in 1920; father of two children, Robert and Beverly.

Davey, William Patrick; M.D. Born at Ponce, Nebraska; graduated from Ponce High School, 1930; M.D., Creighton University Medical College, Omaha, Nebraska, 1938; interne, Creighton Memorial St. Joseph's Hospital, 1938-1939; residency at Douglas County Hospital, 1939-1940. Member of Knights of Columbus. Private practice, Emmetsburg, Iowa, 1940, to the present time. Youngest member of Palo Alto County Medical Society. A brilliant, progressive young physician with a very promising future. Maintains offices with Dr. H. R. Powers.

*Ruthven*

Bosley, Carl Estep; M.D. Born 1884, Ladora, Iowa; M.D., State University of Iowa, College of Medicine, 1913. Private practice at Ruthven, 1913 to 1915. Removed to Sioux City, served in the army during World War I; died at Silver City, New Mexico.

Mock, Frank Xavier, M.D. Born 1879 in Illinois; studied for the priesthood and then decided on a medical career; graduated from Loyola University School of Medicine, Chicago, in 1916. Came to Ruthven in 1922; practiced until 1926 and then removed to Elgin, Iowa. Now connected with the U. S. Indian Service in Oklahoma.

Molesberry, Jasper Merl; M.D. Born at Plymouth, Iowa, September 18, 1896; graduated from Plymouth High School, 1914; attended Iowa State Teachers College, 1914; taught country school, 1914-1915; attended Upper Iowa University, 1915 to 1918. Enlisted in the U. S. Army, April 12, 1918, and served until discharged, February 15, 1919. M.D., State University of Iowa College of Medicine, 1925; interne, Iowa Methodist Hospital, Des Moines, Iowa, 1925-



Top Row: E. D. Beatty, Mallard; H. L. Brereton, Emmetsburg; R. J. Brink, Ayrshire;  
F. X. Cretzmeyer, Emmetsburg

Second Row: W. P. Davey, Emmetsburg; P. P. Fransco, Ruthven; H. F. Givens, West Bend

Third Row: H. M. Huston, Ruthven; G. H. Keeney, Mallard; J. P. McManus, Graettinger

Last Row: Th. T. Naae, Graettinger (Deceased August 5, 1941); P. O. Nelson, Emmetsburg;  
H. R. Powers, Emmetsburg; J. W. Woodbridge, Emmetsburg



1926. Opened an office at Ruthven, Iowa, practicing there until December 1, 1930. Three year postgraduate course in ophthalmology, State University of Iowa, College of Medicine; served as assistant ophthalmologist there, December, 1931 to November 30, 1933. Private practice at Milwaukee, Wisconsin, January 1, 1934, specializing in ophthalmology.

Fransco, Peter Paul; M.D., Ph.B. Born at Ivanhoe, Minnesota, May 19, 1897; graduated from Ivanhoe High School, 1915; graduated from College of Pharmacy, Creighton University, Omaha, 1917. Owned and operated drug store, Ivanhoe, Minnesota; M.D., Creighton University, College of Medicine, 1927. Part-time teaching in College of Pharmacy, Creighton University, during last two years of medical course. Summer School, Creighton, Ph.B.; undergraduate work at Chicago Lying-In Hospital, Chicago; interne, St. Mary's Hospital, Minneapolis, Minnesota, 1928. Practiced at Ruthven, Minnesota, 1928 to 1930. Private practice at Ruthven, Iowa, December 1930 to the present time. Married Mary Conlan at Omaha, Nebraska, August 2, 1926; two children, Peter James and Ellen Pauline. Member of Knights of Columbus. Member of the Ruthven school board for four years.

#### *Graettinger*

McManus, Joseph; M.D. Born at Adair, Iowa, August 21, 1882; graduated from High School, 1902; M.D., Northwestern University Medical College, Chicago, June, 1910. Practiced at Parnell, Iowa. Private practice at Graettinger, Iowa, 1928 to the present time. Married Agnes Murphy, November 19, 1913; two daughters, Mary and Ann. Member of Knights of Columbus; past president of Palo Alto County Medical Society.

#### *West Bend*

Givens, H. Frank; M.D. Born in Shenandoah Valley, Virginia, February 25, 1872; graduated from Fairview Academy; M.D., Randolph-Mason College and University D. F. Hunter McGuire's School of Medicine, Virginia, 1896. Practiced in Virginia, 1896 to 1918. Established practice at West Bend, Iowa, 1918 to the present time. A product of the old school he really belongs to another period but his date of entrance to Palo Alto County places him in the modern era. He rings true to the tradition of the historical state from whence he came.

#### *Mallard*

Keeney, George Harvey; M.D. Born at Carlisle, Iowa, March 15, 1880; graduated from Carlisle, Iowa High School, 1901; B.A., Drake University, 1906; M.D., Drake University Medical

College, 1908; interne, Iowa Methodist Hospital, Des Moines; postgraduate work, Harvard University; instructor and coach at Central College, Pella, Iowa, 1909-1910. Married Alice Maude Webster, 1909; two daughters, Marguerite and Ruth. Associated in practice of medicine in Mallard with Dr. E. D. Beatty since 1910. President of the Mallard school board twenty-seven years; member of the County Board of Education, twenty-four years; president and an officer in the Upper Des Moines Medical Society for seven years. Member of the Masonic Lodge; past president of Palo Alto County Medical Society. Former member, First Signal Company, Iowa National Guard. Beginning third term as Palo Alto County representative in the State Legislature.

#### *Ayrshire*

Morrison, C. W.; M.D. Graduated from Drake University Medical College, 1910; practiced at Ayrshire, 1915 to 1922; removed to Sioux City; is now practicing near that vicinity.

Mulholm, M. D. Graduate of Creighton University Medical College; practiced at Ayrshire, 1924 to 1926; is now in the army.

Brink, Raymond Joseph; M.D. Born at Bancroft, Iowa; graduated from St. John's School, Bancroft; B.S. and M.D., Creighton University Medical College, 1936; interne, Creighton Memorial St. Joseph's Hospital, Omaha, Nebraska, 1937. Practiced at Ayrshire, 1937 to the present time. Married Florence Wienkler of Lindsay, Nebraska, 1936; one child, Mary Elise. Member of the Knights of Columbus; present Palo Alto County Coroner.

#### *Curlew*

Gilbert, K. M.; M.D. Practiced from 1910 to 1912.

The fourteen progressive physicians of the medical force in Palo Alto County are heartily in favor of the American pattern of medicine. They are ably represented by their honorable colleague, Dr. George H. Keeney of Mallard who serves this county in the State Legislature. This civic-conscious physician is in a position to study the social, economic and civic situations relative to the practice of medicine. In this respect Palo Alto County is going forward in stressing the importance of organization and careful consideration of the problems which confront the medical profession. Only through constructive leadership will the rights of the individual physician be safeguarded, the public protected and the ideals of the profession preserved against the menace of regimentation and political domination of medical practice.

A history of the Emmetsburg Hospital prepared through the courtesy of Dr. H. L. Brereton of Emmetsburg will conclude this historical discourse. The writer wishes to pay special tribute to the present medical force for their untiring efforts in securing a fine new hospital for the people of Emmetsburg and Palo Alto County. May their deeds go recorded as having lighted the torch in guiding their sacred calling along the road to honor and professional achievements to a greater destiny.

In the seniority of service the following physicians are today practicing medicine in Palo Alto County. Emmetsburg: Dr. J. W. Woodbridge, Dr. F. X. Cretzmeyer, Dr. H. L. Brereton, Dr. P. O. Nelson, Dr. H. R. Powers and Dr. W. P. Davey; Ruthven: Dr. H. M. Huston and Dr. P. P. Fransco; Graettinger: Dr. J. P. McManus; Mallard: Dr. E. D. Beatty and Dr. G. H. Keeney; West Bend: Dr. H. F. Givens; and Ayrshire: Dr. R. J. Brink.

During the spring of 1920 the doctors of Emmetsburg talked among themselves concerning the possibility of starting a hospital. Most of the young men who were to return from the war had come home. People were taking a renewed interest in their work with prospects of prosperous times ahead. A land boom was developing to increase the sense of prosperity. It seemed fitting that Emmetsburg and Palo Alto County should have a hospital. Accordingly a meeting of laymen and doctors was called. Those present, in addition to doctors, were Mr. E. A. Morling, Mr. Martin Ausland, Mr. William E. G. Saunders, Mrs. Matthew Grier and Mrs. Joseph Higgins.

To Mr. Morling, who later was one of Iowa's Supreme Court judges, was delegated the work of drawing up articles of incorporation. Dr. Frank X. Cretzmeyer and Dr. Harold L. Brereton were requested to act with Mr. Morling as representatives of the doctors to see that the articles were properly signed by a board to be selected. The doctors were designated to select members for the first board of directors. It was understood that no medical man would serve on the board. The doctors met for this purpose in Dr. Hennessy's office some time during the early fall of 1920.

On September 25, 1920, there were filed in the office of the recorder of deeds of Palo Alto County, articles of incorporation of the Palo Alto Hospital Association. The following signers are listed as incorporators, and composed the board of directors: Mrs. H. W. Beebe; Mr. Charles Du-higg, vice president; Mr. W. F. Eagan; Mr. C. J.

Frye, president\*; Mrs. Edith B. Grier\*; Mrs. P. F. Gylling; Mrs. E. J. Higgins, secretary and treasurer; Mr. D. A. Johnson\*; and Mr. E. A. Morling\*.

The board procured the old Charles McCormick residence because it had rooms on both sides of a hall in which was a straight stairway up and down which patients might be carried. Funds to make



THE EMMETSBURG HOSPITAL  
H. L. BRERETON, M.D., Emmetsburg

the first payment on the property were obtained from the local Red Cross chapter. Alterations in the building were made; rooms were furnished by various organizations, and the hospital was opened for inspection on Decoration Day in 1921. At first there were nine patient beds and two bassinets. Later the capacity was increased to fourteen patient beds and four bassinets.

The McCormick residence gave good service. Often, however, it was crowded to capacity. Ways and means were considered, therefore, to obtain a larger and better building. Two attempts to obtain a County Public Hospital were defeated by the voters of the county. Finally the Emmetsburg school board was asked to sell, for a nominal sum, the unused East Side School building to the Hospital Association. At an election in the fall of 1939 consent was given by a large majority. The new hospital was opened to the public on Hospital Day, Sunday, May 12, 1940. Upon this occasion great interest was shown by the people of the county, and 1,100 visitors passed through the building during the afternoon. A few days later the patients were moved to the new building. Emmetsburg and Palo Alto County now have a Community Hospital housing twenty-two patient beds and six bassinets. An elevator takes place of honor over the stairway in the old building, as a means of travel.

(Continued next month)

\*Deceased.



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

- SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY**—By Forrest R. Davison, M.Sc., Ph.D., assistant professor of pharmacology, School of Medicine, University of Arkansas. The C. V. Mosby Company, St. Louis, 1940. Price, \$5.00.
- METHODS OF TREATMENT**—By Logan Clendening, M.D., and Edward H. Hashinger, M.D., medical department of the University of Kansas. Seventh edition. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.
- MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE**—Edited by Philip Bard, professor of physiology, Johns Hopkins University School of Medicine. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.
- ACCIDENTAL INJURIES**—By Henry H. Kessler, M.D., attending orthopedic surgeon, Newark City Hospital. Second edition, enlarged and thoroughly revised. Lea and Febiger, Philadelphia, 1941. Price, \$10.00.
- TEXTBOOK OF PEDIATRICS**—By J. P. Crozer Griffith, M.D., emeritus professor of pediatrics, University of Pennsylvania; and A. Graeme Mitchell, M.D., professor of pediatrics, University of Cincinnati. Third edition, revised and reset. W. B. Saunders Company, Philadelphia, 1941. Price, \$10.00.
- HEMORRHAGIC DISEASES**—By Kaare K. Nygaard, M.D., former fellow in surgery, The Mayo Foundation. The C. V. Mosby Company, St. Louis, 1941. Price, \$5.50.
- TECHNIC OF CONTRACEPTION CONTROL**—By Robert L. Dickinson, M.D., and W. E. Morris, M.D. The Williams and Wilkins Company, Baltimore, 1941. Price, fifty cents.
- CARDIAC CLASSICS**—By Fredrick A. Willius, M.D., and Thomas E. Keys, M.D., The Mayo Clinic. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.
- AMERICA ORGANIZES MEDICINE**—By Michael M. Davis. Harper and Brothers, New York, 1941. Price, \$3.00.
- ESSENTIALS OF DERMATOLOGY**—By Norman Tobias, M.D., senior instructor in dermatology, St. Louis University. J. B. Lippincott Company, Philadelphia, 1941. Price, \$4.75.
- ELIMINATION DIETS AND THE PATIENT'S ALLERGIES**—By Albert H. Rowe, M.D., lecturer in medicine, University of California Medical School. Lea and Febiger, Philadelphia, 1941. Price, \$3.00.
- THE NEW INTERNATIONAL CLINICS—Volume II, New Series Four.** Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1941.
- CLINICAL IMMUNOLOGY, BIOTHERAPY AND CHEMOTHERAPY**—By John A. Kolmer, M.D., professor of medicine, Temple University School of Medicine; and Louis Tuft, M.D., assistant professor of medicine, Temple University of Medicine. W. B. Saunders Company, Philadelphia, 1941. Price, \$10.00.
- MICROBES WHICH HELP OR DESTROY US**—By Paul W. Allen, Ph.D., professor of bacteriology, University of Tennessee. The C. V. Mosby Company, St. Louis, 1941. Price, \$3.50.
- OUT OF THE TEST TUBE**—By Harry N. Holmes, Ph.D., professor of chemistry, Oberlin College. Third edition, revised. Emerson Books, Inc., 251 West 19th Street, New York, 1941. Price, \$3.00.
- HANDBOOK OF COMMUNICABLE DISEASES**—By Franklin H. Top, M.D., Director, Division of Communicable Diseases and Epidemiology, Herman Kiefer Hospital and Detroit Department of Health. The C. V. Mosby Company, St. Louis, 1941. Price, \$7.50.
- SULFANILAMIDE AND RELATED COMPOUNDS IN GENERAL PRACTICE**—By Wesley W. Spink, M.D., associate professor of medicine, University of Minnesota School of Medicine. The Year Book Publishers, Chicago, 1941. Price, \$3.00.
- THE NEW INTERNATIONAL CLINICS—Volume III, New Series Four.** Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1941.

## BOOK REVIEWS

### APPROVED LABORATORY TECHNIC

By John A. Kolmer, M.D., professor of medicine, Temple University School of Medicine. Third edition. D. Appleton-Century Company, New York, 1941. Price, \$8.00.

The first edition of *Approved Laboratory Technic* has been widely used since its publication in 1931. It represents the group opinion of leading clinical pathologists with the collaboration of some twenty-eight other persons.

This, the third edition, consists of five sections and an appendix. The sections describe general laboratory methods, clinical pathologic methods, bacteriologic methods, serologic methods and chemical analyses, in that order. In the appendix of twenty-six pages we find the only essential difference between the third edition and the second edition published in 1938. It includes a variety of subjects all the way from paroxysmal hemoglobinuria through various modifications of serologic tests (Eagle, etc.) to a method of determining thiocyanates in the blood.

The book is well written and the methods described are clearly outlined and easy to follow. It is a good book to have as a reference. However, anyone who has the second edition need not purchase this edition unless he feels the twenty-six page appendix is worth the price of the whole book. R.M.S.

### THE NEW INTERNATIONAL CLINICS

Volume I, New Series Four. Edited by George Morris Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1941.

The same high quality of papers which characterizes all the volumes of this excellent series is carried on in the present volume. The original contributions, the clinics and the reviews of progress which comprise these volumes provide the reader with a wide variety of subjects from authoritative sources which permit him to keep informed of progress in medicine.

This volume contains eight original contributions on diverse subjects: Sulfapyridine in the treatment of children, the differential diagnosis of shoulder pain, chronic lymphatic leukemia and types of hypertensive heart failure. The faculty of the Yale University School of Medicine presents thirteen clinics which cover a wide variety of subjects. Geiger in a clinic on curable heart disease presents a case of calcification of the pericardium, a patient with angina relieved by total thyroidectomy, a case of congestive heart failure due to Vitamin B deficiency, and a patient with patent ductus arteriosus treated by surgical ligation. In a clinic on the diagnosis of cancer of the stomach and colon the author points

out that delay in gastro-intestinal x-ray in the patient with suspicious symptoms is the most common error made by the physician. Heineman brings out the fact that capillary fragility is not specific for any one group of diseases and does not aid in the diagnosis of Vitamin C deficiency.

Borden Veeder and E. H. Rohlfing present the present status of immunization procedures for the prevention of certain of the communicable diseases. This is an accurate discussion of the methods and an appraisal of the value of the various procedures in the prophylaxis of the common contagious diseases.

D.K.

#### CARE OF THE AGED

By Malford W. Thewlis, M.D., attending specialist, General Hospital, United States Public Health Hospitals, New York. Third edition. The C. V. Mosby Company, St. Louis, 1941. Price, \$2.00.

This book was written upon three basic principles; first, that senility is a physiologic entity like childhood; second, that diseases in senility are pathologic conditions in a normally degenerating body; and third, that the object of treatment of disease in senility is to restore the diseased organ to the state normal in senility.

Upon these three principles the specialty of geriatrics was evolved, and Dr. Thewlis has written this book in order to teach doctors how to care for older persons. All problems from nursing care to surgery are discussed. The various sections include: value and hygiene of old age, prolonged life, hobbies, economic problems, medicolegal relations, miscellaneous medical problems, specific infections, non-infectious diseases and the pathologic conditions of old age. This book is of great value to the physician who cares for the aged.

E.B.W.

#### A TEXTBOOK OF PATHOLOGY

Edited by E. T. Bell, M.D., professor of pathology, University of Minnesota. Fourth edition, enlarged and thoroughly revised. Lea and Febiger, Philadelphia, 1941. Price, \$9.50.

This textbook, now in its fourth edition, has been widely accepted for teaching and reference purposes due to its thorough and accurate coverage in the field of pathology. The text in this revision is considerably enlarged and most all sections have been rewritten, bringing subject matter in accord with current medical thought.

Inasmuch as the authors present their discussions from the clinical standpoint, the textbook is uncommonly useful as a reference in pathology for the practicing physician. The numerous, well-chosen and well-produced illustrations add materially to the usefulness of the volume.

R.R.S.

#### A MANUAL OF ALLERGY

By Milton B. Cohen, M.D., Cleveland, Ohio. Paul B. Hoeber, New York, 1941. Price, \$2.00.

The reviewer feels that this little manual should be a valuable addition to the library of every physician. The problems in the field of allergy to be met by the family physician are clearly set forth. Principles of diagnosis and treatment are intelligently and concisely treated, and allergic rhinitis, asthma, hay fever and eczema are given special attention.

Material is well arranged and follows the outline form closely. While only a little over one hour is required to read the manual there is much material to stimulate some constructive thinking in this comparatively young field in the practice of medicine.

W.M.W.

#### A PRIMER FOR DIABETIC PATIENTS

By Russell M. Wilder, M.D., professor of medicine, The Mayo Foundation, University of Minnesota. Seventh edition, reset. W. B. Saunders Company, Philadelphia, 1941. Price, \$1.75.

It is absolutely essential for the diabetic patient to know how to follow his doctor's instructions and Dr. Wilder, in his primer, has made this possible in easy understandable language which the layman can quickly grasp. A method of the simultaneous injection in one syringe of both protamine zinc insulin and regular insulin is described. The author states that this procedure has given excellent results.

At the end of each chapter is a list of questions and answers which all diabetic individuals should know. The book can be used by all diabetic patients advantageously.

E. B. W.

#### DR. COLWELL'S DAILY LOG FOR PHYSICIANS

Colwell Publishing Company, Champaign, Illinois, 1941. Price, \$6.00.

For ten years this helpful volume has found a welcome place in the review columns of the JOURNAL, and during that time reviewers have almost exhausted their supply of complimentary adjectives.

Perhaps it is sufficient to say that the publishers do not in any way overestimate their book when they call it "a brief, simple, accurate financial record for the physician's desk." The truest criterion of the value of this system is the continued pleasure and satisfaction derived from its use. This combination appointment book and bookkeeping record, with its business summary sheets will win new friends each year. We can recommend it without reservations for the busy practitioner; it will greatly lighten the ever-increasing burden of keeping accurate records.

D. K.



# The JOURNAL

of the

## Iowa State Medical Society

VOL. XXXI

DES MOINES, IOWA, DECEMBER, 1941

No. 12

### CERTAIN CONSIDERATIONS OF CORONARY DISEASE\*

FREDRICK A. WILLIUS, M.D.

Section on Cardiology,  
Mayo Clinic, Rochester, Minnesota

The interest of the medical profession in coronary disease must not lag even though the subject has been freely discussed during the last decade. It is only through a sustained interest and an enduring inquisitiveness that constructive supplements to knowledge of this important subject will be made. It is not my intention to attempt to offer a textbook consideration of coronary disease but, rather, to discuss certain phases of the problem, particularly those which have necessitated the revision of existing ideas and others that at present are undergoing the scrutiny of investigation.

It is a regrettable fact that the importance of clinical physiology has as yet not been impressed on the medical profession at large. By many, physiology is still considered an abstract science that holds little interest, especially since the by-gone years when the final examination in this subject was written. This attitude is difficult to reconcile when it is obvious that the first requisite in the thorough understanding of an organ or a system is to appreciate its function under normal circumstances in order to be able to evaluate its dysfunction under abnormal circumstances; namely, in the presence of disease. An alert interest in and a practical knowledge of clinical physiology is essential not only in the diagnosis of disease but also in its intelligent treatment.

The heart is an unusual organ, being the most dynamic unit of the body and one that successively repeats its function with only fleeting periods of rest. The propulsion of blood into the remote parts of the body requires great force and repeated effort. No other muscular organ of the body can simulate this performance without sur-

rendering to fatigue. The normal heart holds its distinctive position by virtue of its adequate and remarkably efficient circulation which permits it to be possessed of an unusually efficient metabolism. The primary requisite of a normally functioning heart is the maintenance of an adequate respiration of its muscle mass. By this is meant the prompt delivery of the necessary quantity of oxygen to the cells of the myocardium and the prompt removal of excesses of accumulated carbon dioxide. The ability of the heart to meet increased demands in terms of work depends pre-eminently on the ability of the coronary circulation to supply blood and thereby oxygen to its musculature. Coronary insufficiency results not only from disease of the coronary vessels themselves but also from impairment in coronary blood flow, resulting from increased pressure in the chambers of the heart into which the coronary venous blood drains, as may occur in greatly hypertrophied and dilated hearts.

In heart failure from any cause, the heart dilates only when it is unable to carry its load without dilating. The energy output of the heart depends on the diastolic fiber length, and when the heart dilates under a constant load it does so because the ventricle is unable to eject as much blood at each beat as is delivered to it, and thus, increasingly larger quantities of residual blood remain within the ventricle at the end of systole. As a compensatory mechanism, there is the possibility that the quantity of blood during diastolic filling remains the same; then, ultimately a status may be reached in which enough energy can be put to useful work to permit the contracting ventricle to deliver a quantity of blood exactly equal to that delivered to it in diastole. Thus, a relatively adequate coronary blood flow may be re-established.

Another mechanism controlling coronary flow is the existence of a pressure gradient; that is, the differences of pressure existing between the aorta at the coronary orifices, and the coronary sinus and the right ventricle. This factor re-

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cently has been re-emphasized by the experimental studies of Visscher and his associates,<sup>8 and 11</sup> They have shown that the greater the differences in pressure between the aorta and the pulmonary artery, the greater is the thebesian flow, while the coronary sinus flow is reduced. When the aorta-pulmonary artery pressure head is less than 60 millimeters of mercury, the thebesian flow subsides greatly. The higher the aorta-coronary sinus pressure difference, the greater will be the coronary sinus flow.

The coronary venous circulation has not been accorded the importance it deserves, and although important studies of the subject have been made, many factors are still not clear. Katz and his associates<sup>6</sup> have studied the distribution of the coronary blood flow and have made important observations. They showed that an average of 92 per cent of the blood from the right circumflex artery drains into the right thebesian system, while the coronary sinus receives an average of only one per cent and the left thebesian system an average of seven per cent of the blood. In the case of the left circumflex artery, the right thebesian system drains an average of 48 per cent of the blood, the coronary sinus an average of 38 per cent, and the left thebesian system, 14 per cent of the blood. The anterior descending branch of the left coronary artery drains an average of 51 per cent of its blood into the right thebesian system, an average of 42 per cent by way of the coronary sinus, and an average of seven per cent into the left thebesian system. These studies clearly show the importance of the right thebesian system as a drainage bed, even of the blood from the arteries of the left side of the heart. Thus, approximately two-thirds of the total blood flowing through these three important arteries drains into the right thebesian system and less than one-third into the coronary sinus. It therefore becomes evident, as already mentioned, that interference with this important drainage bed, such as occurs when pressure within the right ventricle becomes significantly increased, immediately impairs the efficiency of the arterial coronary blood flow.

The etiology of coronary disease and the reasons underlying its increasing prevalence are always interesting questions. The causes of coronary atherosclerosis are, of course, the causes of atherosclerosis in general. It has generally been presumed that atherosclerosis represents a degenerative process, one of the inevitable manifestations of the senescence of man. Atherosclerosis appears to be a concomitant phenomenon of aging, but occurs earlier in some individuals than in others and involves the arteries of various organs of the body dissimilarly in different indi-

viduals. The important rôle of heredity in this problem cannot be denied. It is not my intention to imply that the actual arterial changes are a heritage but, rather, that a predisposition to these changes is transmitted to progeny in the form of arterial systems of inferior biologic character. Thus, in succeeding generations of such families, the stresses and strains of life tend to select certain members as candidates for the premature development of serious and progressive arterial disease. Clinicians accustomed to inquiry regarding family history are constantly reminded of the relentless forces of heredity as they are encountered in their daily contacts with patients.

During recent years another interesting thought has been projected into the genesis of atherosclerosis. Leary,<sup>7</sup> in 1934, after detailed microscopic study in a representative group of cases of coronary sclerosis, suggested that the changes could no longer be considered as results of an aging process but, rather, that they represent a disturbance in the lipid metabolism of the body, and that atherosclerosis belongs to the class of metabolic diseases, such as diabetes mellitus, obesity and gout. This and previous studies were accorded little attention until the problem was approached from the clinical standpoint.

In a recent study<sup>13</sup> of the plasma lipoids in coronary disease, I found some interesting alterations. The study was carefully controlled by determinations made concerning normal persons of corresponding ages. The patients were not exclusively those of older ages, but comprised those of the fourth to the eighth decades, inclusive. The lipoids studied included cholesterol, cholesterol esters, lecithin, fatty acids and total lipoids. One hundred and seven cases of well marked coronary disease formed the basis of the first analysis, and it was discovered that in 78.5 per cent of the cases some lipid fraction was definitely increased beyond normal. Values for cholesterol were increased in 60.7 per cent of the cases, cholesterol esters in 57.1 per cent, lecithin in 56 per cent, fatty acids in 54.2 per cent and total lipoids in 71 per cent. All fractions were increased in 31.7 per cent of the group. These figures are striking when they are compared to those representing the control series of normal individuals (Table I) of corresponding ages, and the values lead to the conclusion that they are not without significance. It must be stated that other diseases known at times to be associated with hyperlipemia were carefully excluded, such as diabetes mellitus, thyroid dysfunction, xanthoma, various dermatologic diseases, types of blood dyscrasia, cholecystic disease and extreme obesity.



TABLE I. PLASMA LIPOIDS IN CORONARY SCLEROSIS AND IN NORMAL STATES  
Values Represent Milligrams Per 100 c.c. of Blood

Classification	Cases	Cholesterol		Cholesterol esters		Lecithin		Fatty acids		Total lipoids	
		Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range
Coronary sclerosis	107	314	136-735	223	111-690	301	168-500	499	242-773	782	435-1091
Control series	200	218	135-370	154	89-309	220	159-316	350	221-651	568	365-919

Some interesting speculations may be introduced as a result of these data. Cholesterol is a lipid found in nature only in animal bodies and their products. It is the basic substance of every animal cell, and the human supply of cholesterol is obtained solely by ingestion. According to present knowledge, it is not synthesized in the carnivorous animal or in man. It is believed that herbivora synthesize cholesterol from the closely related phytosterols, which have the same chemical formula as cholesterol with a different molecular arrangement. Cellular need for cholesterol is greatest at the time of rapid cell division, such as occurs in the developing embryo, and it is a well-known fact that the egg yolk is rich in this lipid. It has been shown repeatedly that the blood plasma during pregnancy contains increased quantities of cholesterol to meet the nutritional requisites of the embryo.

It is interesting to recall the fact that man is the only known creature that dies relatively young from coronary disease, and when he attains the advanced periods of life, atherosclerosis is universally present. Furthermore, man is the only known creature who, from soon after birth to old age, partakes of a diet relatively high in fat, including such foods as milk, cream, butter, eggs and animal fats. Even the house dog, whose diet simulates, in a measure, that of his master, does not approximate the same intake of fat. Likewise, atherosclerotic lesions closely resembling those of man have been experimentally produced in herbivorous animals, notably in rabbits, by the feeding of diets rich in cholesterol. Barker,<sup>1</sup> investigating the plasma lipoids in obliterative atherosclerotic disease of the extremities, found somewhat lower, but definitely comparable, values. It thus seems probable that some relationship between hyperlipemia and atherosclerosis exists, and that Leary's suggestion that these arterial changes are metabolic rather than degenerative ultimately may be proved. It cannot be stated at this time that the lipid hypothesis is definitely acceptable as an explanation of the production of atherosclerosis, but the position that it may play a rôle in a diverse process is certainly tenable.

While the lipid hypothesis of coronary disease is discussed it is important to call attention again to the remarkable discrepancy of the disease

in incidence according to sex.<sup>14</sup> A great preponderance of the disease occurs among men. This fact has never been satisfactorily explained, but the lipid hypothesis does offer a tenable explanation. It is an acknowledged fact that during pregnancy the storage of lipid in the body is greatly increased as part of a physiologic demand for the nutrition of the developing fetus. It therefore appears logical to suggest that women are endowed with a more active and perhaps a more nearly perfect lipid metabolism, which permits them to utilize completely the recurrent excesses of stored lipid and to accomplish this without incurring arterial deposition. Men, apparently, are not endowed with such an active and almost perfect lipid metabolism and when hyperlipemia occurs, arterial deposition of lipid is more likely to ensue among them.

Another factor relating to coronary disease is tobacco. This problem is interesting the medical profession more than ever, and it is important to note that the smoking of tobacco, particularly in the form of cigarettes, is more prevalent today than ever before. The increased use of tobacco to some degree parallels the increased incidence of coronary disease. In a recent study dealing with tobacco and coronary disease, English, Berkson and the author<sup>5</sup> approached the problem by statistical methods. One thousand records of well-marked coronary disease were selected from the files, but it soon became apparent that certain changes in this sampling were necessary for statistical reasons, because in this group were an extremely small number of records of women and a small number of members of both sexes less than forty years of age. It was therefore decided to include only men forty years of age or older and the requisite number of records of men who had coronary disease were then secured to complete a total of 1,000 cases. Then, in each case, it was noted whether the patient was or was not a smoker, and if he was a smoker, the degree of smoking was graded (on the basis of one to four, in which one indicated the least and four the most smoking). The great majority of patients who were smokers used cigarettes, whereas only a small fraction of patients who used cigars and pipes was present.

Then we secured, for a control group of indi-

viduals who did not have coronary disease, the records of 1,000 men taken consecutively from the files for the same years as the series of cases of coronary disease. Only age and sex and the non-existence of coronary disease were considered in this selection; no attention was given to the individual's status as a smoker. This, in fact, was not obtained from the record until later. The individuals selected as controls comprised those whose examinations were recorded as revealing either normal findings or abnormalities entirely unrelated to the cardiovascular system. The results of the analysis are found in Table II. Among the group of patients who had coronary disease, 698 (69.8 per cent) were smokers, whereas in the group of individuals who did not have coronary disease there were 663 (66.3 per cent) persons who smoked. This represents an increase

TABLE II. COMPARISON OF INCIDENCE OF SMOKERS  
Group of Men More Than Forty Years of Age Who Had Coronary  
Disease; Control Group of Similar Men Without  
Coronary Disease

Years	Coronary disease			(Control) No coronary disease			Difference, coronary disease minus control	
	Total	Smokers		Total	Smokers		Per cent	P*
		Num- ber	Per cent		Num- ber	Per cent		
40 to 49	187	149	79.7	302	187	61.9	+17.8	0.001
50 to 59	382	274	71.7	371	274	73.9	— 2.2	
60 plus	431	275	63.8	327	202	61.8	+ 2.0	0.28
Total	1,000	698	69.8	1,000	663	66.3	+ 3.5	0.05

\*P = the probability that as large a difference in the direction found would occur by chance in random samples, if actually there was no difference. The difference is considered "statistically significant" if the P is 0.05 or less. The P is given only when the difference is positive.

of only  $3.5 \pm 2.1$  per cent of smokers among the patients who had coronary disease. However, when the analysis is carried further and the incidence of smokers in the various age groups is investigated, some marked differences become apparent. The incidence of smokers among 187 patients between the ages of forty and forty-nine years who had coronary disease was 149 (79.7 per cent) as contrasted with 187 smokers (61.9 per cent) among 302 in the same age interval among the patients who did not have coronary disease. This represents a difference of  $17.8 \pm 4.0$  per cent, which is statistically significant. Comparison of this factor in the remaining age groups reveals no significant differences.

The consecutive records of 1,000 men forty years of age or older were then selected on the basis of tobacco-smoking only. We recorded the degree of smoking, and determined the incidence of coronary disease among men. As controls for this group, 1,000 men forty years of age and

older were selected on the basis of their being non-smokers and in this group the incidence of coronary disease was likewise obtained. Table III illustrates the results of the analysis for these two groups. There were fifty-four instances (5.4 per

TABLE III. COMPARISON IN SMOKERS AND  
NON-SMOKERS  
Coronary Disease in a Group of Male Smokers More Than Forty  
Years of Age and Coronary Disease in a Group of  
Non-smokers More Than Forty Years Old

Years	Smokers			(Control) Non-smokers			Difference, smokers minus control	
	Total	Coronary disease		Total	Coronary disease		Per cent	P*
		Number	Per cent		Number	Per cent		
40 to 49	208	10	4.8	208	2	1.0	+3.8	0.01
50 to 59	388	24	6.2	388	10	2.6	+3.6	0.01
60 plus	404	20	5.0	404	26	6.4	-1.4	
Total	1,000	54	5.4	1,000	38	3.8	+1.6	0.04

\*See footnote, Table II.

cent) of coronary disease among the smokers in contrast with thirty-eight such instances (3.8 per cent) among the nonsmokers. The difference is  $1.6 \pm 0.9$  per cent, which is barely significant statistically.

However, when these two groups were subdivided into age groups the differences in the incidence of coronary disease among the smokers and the non-smokers was more impressive. The incidence of coronary disease among smokers between the ages of forty and forty-nine years was 4.8 per cent as contrasted with only 1.0 per cent in the same age group among the non-smokers, revealing a difference of  $3.8 \pm 1.6$  per cent, which is statistically significant. A similar situation prevailed in the age group of men fifty to fifty-nine years of age, in which the incidence of coronary disease among smokers was 6.2 per cent and among the non-smokers was 2.6 per cent, indicating a difference of  $3.6 \pm 1.6$  per cent, which again is statistically significant. Among patients more than sixty years of age no noteworthy differences were observed.

To determine the influence of the degree of smoking, we used only records of men between the ages of forty to forty-nine years, because of the fact that members of this group exhibited the greatest differences in the incidence of coronary disease. The non-smokers were compared with the smokers, the latter were grouped into those who were graded as smokers of degrees one and two and those who were graded degrees three and four. The results are shown in Table IV, in which it is seen that for non-smokers, smokers of moderate degree and excessive smokers, the inci-



TABLE IV. 208 NON-SMOKERS AND 208 SMOKERS  
Analysis of Influence of Grade of Smoking or Absence of Smoking  
on Incidence of Coronary Disease

416 men, ages 40 to 49, inclusive (smokers and non-smokers)			
Smoking, degree	Total cases	Coronary disease	
		Number	Per cent
None	208	2	1.0
1 to 2	174	8	4.6
3 to 4	34	2	5.9
Totals	416	12	5.6

dence of coronary disease was, respectively, 1.0 per cent, 4.6 per cent and 5.9 per cent. Although these data do not permit the conclusion that the smoking of tobacco is an established etiologic fact in coronary disease, they suggest that smoking apparently is a precipitating factor tending toward the earlier development of these atherosclerotic changes.

It seems appropriate to comment briefly on certain phases of the pathology of coronary disease. Considerable variation occurs in the degree of involvement of the coronary arteries from case to case. The main arteries and their larger tributaries are most commonly involved. The coronary arterioles remain remarkably free of pathologic alterations even in diseases which are notoriously associated with arteriolar changes elsewhere in the body, such as so-called malignant hypertension.

The train of symptoms which the individual displays depends considerably on the extent, the degree and the nature of the atherosclerotic involvement. Rather diffuse involvement of the larger coronary arteries, whereby their elasticity becomes impaired or even completely lost, may permit sufficient circulatory adequacy to be maintained under somewhat restricted degrees of physical activity. Under such circumstances only moderate dyspnea may be provoked. On the other hand, the involvement of the major coronary arterial tributaries may be considerably more restricted, but if, in one or more localized regions, the lumen of the vessel becomes considerably narrowed, resulting in the so-called atherosclerotic plaque, or rather, diffuse impending obliteration, then the tendency exists for the exhibition of paroxysmal symptoms, especially the well-known syndrome of angina pectoris. This syndrome is acknowledged to be the result of sudden periods of myocardial anoxemia occurring when demands are imposed on the heart beyond that organ's ability to supply adequate quantities of blood. Another factor undoubtedly comes into action under these circumstances; namely, arterial spasm (not spasm of the larger arteries, but sudden con-

striction of the smaller peripheral arteries and the arterioles). The prompt relief of pain by the administration of nitrites and alcohol testifies to the validity of this conception. Among patients who have the condition under consideration, the development of coronary occlusion by means of thrombosis, progressive atherosclerotic narrowing, or by sudden occlusion resulting from hemorrhage into the wall of the vessel, is likely to occur with or without previous symptomatic heralding.

There is another interesting group of conditions which do not occur as commonly as those already mentioned, but which are by no means unfamiliar to the general practitioner and to the cardiologist. I refer to those cases in which disturbances in cardiac conduction, such as complete and partial heart block, bundle branch and intraventricular block, are displayed. These phenomena may occur as part and parcel of severe and progressive generalized coronary atherosclerosis, yet in numerous instances disturbances of conduction occur from the rather localized involvement of those smaller penetrating arterial branches which supply the auriculoventricular bundle and its branches. When the latter occurs and the remaining portion of the coronary tree remains normal or at least functionally adequate, the patient may continue to live comfortably for many years. Partial and complete heart block are exceptions to this statement, since they result in profound disturbances in cardiac rhythm and may eventuate in the well-known syndrome of convulsive syncope (Stokes-Adams syndrome) which acknowledgedly is attended by a high mortality rate.

Bundle branch block and intraventricular block are not necessarily incompatible with reasonably good health and extension of life.<sup>4, 9 and 15</sup> In many instances the pathologic lesions responsible for bundle branch block and intraventricular block are localized and not progressive. Obviously, the prognosis under these circumstances is directly contrary to that in cases in which the coronary arteries are severely and extensively involved. For instance, the clinical indicators to the first group of cases are the absence of the anginal syndrome, absence of previous coronary thrombosis, paroxysmal dyspnea, congestive heart failure, severe hypertension and marked cardiac enlargement.

Because of its direct bearing on clinical judgment in coronary thrombosis, it seems appropriate to discuss the healing of cardiac infarcts. The frequency with which the question is asked, how long should the patient who has acute coronary thrombosis remain at complete rest in bed, testifies

to the importance of this subject. A few years ago, White and Patmos,<sup>12</sup> working at the Mayo Clinic, made a careful histopathologic study of cardiac infarcts which had been present for from a few hours to several years. Unfortunately, this work was never published, and with full credit to these workers I wish to summarize the results of their investigation.

They found that when death occurred within two to four hours after coronary thrombosis, regions of focal degeneration were present in muscle of apparently normal appearance. In the muscle bundles, however, regions of early necrosis, cloudiness, pyknosis of nuclei and diminution of the transverse striations were demonstrable and there were slight interstitial edema and congestion of the blood vessels. Infarcts of from four hours to five days old exhibited complete necrosis and acute inflammation. The necrotic regions were found to coalesce, and numerous polymorphonuclear leukocytes were seen around the edges. A few lymphocytes, mononuclear leukocytes and extravasated erythrocytes were visible. The polymorphonuclear leukocytes first appeared within the adventitia of small blood vessels four hours after formation of the infarct, and they gradually increased in number during the succeeding four or five days. In infarcts which were two days old, phagocytosis was well under way.

The amount of fat in the necrotic and degenerated muscle cells was found to be increased and karyorrhexis and karyolysis of muscle bundles were marked. Cellular changes, ranging from hyaline to granular degeneration, occurred. Fibroblasts were observed occasionally at the margins of the necrotic portions of the infarcts which were thirty-six hours old, but they were not plentiful except in infarcts five days old. Infarcts from five to twenty-two days old and even older gave evidence of rapid disappearance of the inflammatory reaction and gradual replacement by connective tissue. Fibroblasts were found to be arranged at right angles to the newly formed blood vessels, and when nine days had elapsed since the occlusive episode, they were prominent and the necrotic regions were diminished greatly. After twenty-two days, regions of diffuse fibrosis were present. In infarcts which were from four to six months old, condensation and contraction of the fibrous scar were present; these represented complete healing. The results of this study clearly indicate the importance of complete and prolonged rest. The minimal period of complete rest in bed should comprise at least five or six weeks and instances occur in which the time must be prolonged even more.

Even before and after complete healing of the infarct, another vital repair process is at work; namely, establishment of collateral circulation. This process has been very clearly demonstrated by Blumgart and his co-workers,<sup>2 and 3</sup> and independently by Smith<sup>10</sup> at the Mayo Clinic, who employed injection methods in which a fluid medium that permitted demonstration of minute arterial tributaries was used. Anastomotic communications of less than 40 microns in diameter between various coronary arteries exist in the normal heart, but they apparently play only a potential rôle in the prevention of the sudden and perhaps serious effects of coronary narrowing or occlusion. When marked narrowing or occlusion of coronary arterial tributaries takes place, collateral circulation tends to occur and intercommunicating vessels of up to 200 microns in diameter may be found. Such collateral circulation is capable of compensating for the reduced vascularity resulting from atherosclerotic narrowing or actual occlusion of main coronary arteries, so that the blood supply to the heart remains relatively adequate for a restricted manner of life. Time is required for this process to develop and this less appreciated mechanism of repair must always be borne in mind when the convalescent course of a patient is planned. It is not a matter of weeks, but one of months and probably years.

Death occurs whenever a sufficiently large portion of the myocardium undergoes ischemia, with or without necrosis, or when other fatal circumstances intervene, such as profound disturbances in rhythm (asystole or ventricular fibrillation) or congestive heart failure. The serious consequences of coronary insufficiency occur when imbalance exists between the nutritional requirements of heart muscle and the factors which permit adequate nutrition to occur. It is in such a circumstance that collateral circulation usually determines the survival of the patient, not only in coronary thrombosis but in occlusion resulting from other causes.

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## SIGNIFICANT X-RAY FINDINGS IN HEART DISEASE\*

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It is our purpose in this discussion to emphasize the significance, and to demonstrate a few of the fairly common x-ray findings in heart disease. We have thus limited our subject to a small, but in our opinion, important and practical phase of cardiovascular roentgenology.

X-ray examinations of the heart were made almost as soon as the x-ray came into use, but the development of cardiovascular roentgenology was rather slow and even as late as 1920 Sir James MacKenzie wrote that he doubted if the x-ray ever threw light on any cardiac condition. Smithers suggested that the reasons for this slow development were: first, that the x-ray alone seldom provided a positive diagnosis; and second, that this method of examination tended to remain in the province of the specialist because only the cardiologist appreciated the valuable information it might reveal. In the last ten or fifteen years the field of cardiovascular roentgenology has been developed rather rapidly; the use of the x-ray in making examinations of the heart has become much more common, and its advantages more generally appreciated. Indeed, today, examination of the heart can hardly be regarded as complete without an x-ray study. While it still rarely provides us with a diagnosis it has now been amply demonstrated that much valuable information regarding the heart may be gained from a careful x-ray examination.

The chief methods of examination are fluoroscopy, orthodiagraphy and teleroentgenography. Such methods as tomography, and cinematography, while of some practical importance already, are still in the developmental stage and are hardly

ready for general use. Only by x-ray examination can the size and shape of the heart be determined with certainty during life, and by fluoroscopy its pulsations may be directly observed.

Kymography is a recently developed method of examination of the heart which enables us permanently to record on films the heart shadow and its pulsations. By recording the pulsations of the various portions of the heart we are able to study them much more minutely; this method has already demonstrated that it may yield much useful information concerning cardiac function and cardiac defects. We feel that kymographic examination of the heart will shortly come into more general use. It is the information which may be gained by accurate observation of the size, shape and pulsations of the heart and great vessels that is often of so much value in appraising the state of cardiac function, and in helping to establish the diagnosis of certain defects. Since the whole chest is always observed at the time an examination of the heart is made, significant signs in the lung fields bearing on the state of the cardiac function are often revealed and certainly deserve mention.

As for the three usual methods of examination previously mentioned we will not discuss their relative merits, except to say that some men feel a careful fluoroscopic examination will yield the most information, but has the disadvantage of not providing a permanent record of it. However, it is nearly always used in association with one of the other two methods. Of these two, teleroentgenography is most widely used and physicians generally undoubtedly examine more x-ray films of the chest and heart than make orthodiagraphic examinations. For this reason we feel that the demonstration of some of the significant signs which such films reveal should be of the most practical value. Since most of these plates are taken in the posterior anterior view with the tube at a distance of six feet, most of the plates we wish to show are taken in this manner. We should emphasize at this point, however, that much valuable information may be overlooked by omitting a careful study of the heart in the left anterior oblique and right anterior oblique positions, and by watching the heart shadow under fluoroscopy during rotation from one position to another. Separate studies of the individual chambers of the heart may best be made in this manner. Since we cannot go into many of the phases of cardiovascular roentgenology, we will limit the remainder of our discussion to the teleroentgenographic findings in the posterior anterior view as seen on the usual chest plate.

Before considering abnormalities in the size and

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shape of the heart, we must first have in mind the normal size and shape and some of their normal variations. A number of measurements of the heart size have been devised to help in establishing normal standards. However, there is so much variability in measurements, depending on factors which often cannot be taken into consideration, that accurate universal standards of measurement are impossible of attainment. We will spend no time discussing these various measurements; while they may be very helpful in many instances, they cannot be universally applied. Probably the most widely used rule of thumb for determining the normality of heart size is that the widest transverse diameter of the heart should not exceed one-half of the internal diameter of the chest at its widest point. This like the other measurements does not always hold good. In the asthenic type of individual the width of the heart shadow is only about one-third of the internal diameter of the chest. In this type, if the heart size is fully one-half the internal diameter of the chest, we can consider it at least slightly enlarged. On the other hand in the broad heavy short-chested type of individual the width of the heart shadow may normally be only slightly less than three-fifths of the internal diameter of the chest. Particularly in this short heavy-chested individual the heart shadow may be appreciably wider in full expiration than in full inspiration. The position of the diaphragm has much less influence on the width of the cardiac shadow in the asthenic type.

Usually we take our plates with the chest in slight to moderate inspiration. The shape and position of the heart also vary considerably in individuals of different build. In the asthenic type the chest is long and narrow and the heart hangs down vertically from the great vessels, with the apex pointing downward. In the heavy type the chest is short and broad and the heart lies transversely with the apex pointed laterally. The lateral heart borders in both instances are not in straight lines but consist of a series of curves. The lower border cannot be well visualized as a rule. In the heavy-chested type these curves in the lateral border are more pronounced while in the extreme asthenic type the curves are slight but definite. Other chests vary between these two extremes. Enlargement of the cardiac shadow beyond normal limits is one of the significant x-ray findings which is often of considerable value in assessing the condition of the heart. Many times we have percussed out cardiac dulness, and concluded either that the heart was slightly enlarged, or that it was probably within normal limits as to size. After taking an x-ray plate our opin-

ion as to size frequently had to be reversed. When the heart is much enlarged or well within normal limits as to size, our physical findings are usually corroborated by the x-ray findings.

Besides abnormalities in size, abnormalities in the shape of the cardiac shadow are also significant. Let us consider the shape of the normal heart again and the structures that make up the lateral borders. In the normal heart at the upper left border is a small curve due to the aorta. Immediately below this is a very slightly convex curve at somewhat of an angle with the first; it is directed downward and to the left and is practically continuous with the left border of the main shadow of the heart, which lies below. The pulmonary artery and the right ventricular infundibulum make up this portion of the border. Below this is usually seen a long convexly curved border extending to the apex of the heart shadow that is formed by the left ventricle. At the top of the right border there is a faint almost straight edge for a short distance which is formed by the superior vena cava. Immediately below this and extending to the middle of the right border is, either a straight line representing the edge of the superior vena cava or, more often, a slightly convex curve due to the ascending portion of the aorta; the upper part of this curve is directed to the left. The lower half of the right border is a moderately convex curve formed by the right auricle and in the lowermost portion by the right ventricle. So much for the normal heart contour.

One of the most common significant x-ray findings is a definite prominence in the shadow of the left ventricle. It is seen in lesions which produce an undue strain on this chamber. It is seen most commonly in hypertension, coronary artery disease and aortic valve disease. Marked mitral regurgitation may cause it but with this lesion there is usually an associated enlargement of the right side of the heart. The left lower border of the heart extends laterally and perhaps downward. This finding in the absence of any clinical explanation probably means that the patient has had a hypertension even though it may not be present at the time of the examination. Certainly a shadow of this type should make us redouble our search clinically for conditions which put a strain on the left ventricle. Then, too, in cases of hypertension or aortic valve disease a little increased prominence of the left ventricle may be one of the earliest signs of a lowered cardiac reserve.

Another common significant x-ray finding in heart disease is a definite prominence of the left upper border. This prominence results in a straight left upper border, continuing in a straight line



with the left lower border whereas, as a rule, there is a definite general concave curve in this area. In some, especially in patients of the asthenic type, there may be a bulge or wide convex curve in this area. The prominence in this area is usually associated with a more marked and more convex curve in the right lower border and some extension of this area of the cardiac shadow to the right. These definite x-ray signs are due to lesions which cause enlargement of the right side of the heart and the pulmonary conus. The most common lesion which does this is a mitral stenosis and, much less commonly, a pulmonary valve stenosis. The prominent left upper border is due to enlargement of the pulmonary conus and the right ventricular infundibulum in these lesions, and the prominence of the right lower border is due to dilation of the right auricle and ventricle. When these x-ray signs are present they are strongly suggestive of a mitral stenosis. We all know that the murmur of mitral stenosis is easily overlooked because of its low pitch and the fact that it may be audible in only a very localized area. An x-ray finding such as we have just described should make us search and search again in an effort to detect such a murmur. We have seen a number of cases in which we made a definite diagnosis of mitral stenosis that had auricular fibrillation, a congested liver, a reduplicated pulmonary second sound, a right axis deviation and the above x-ray signs in which on repeated examinations we were never able to detect a murmur of any kind. In others a faintly audible murmur may be found. In some such instances the x-ray findings are most important and sometimes give the first clue that leads to a definite diagnosis. There may be a significant prominence of the left upper border at times before the transverse diameter of the heart is increased beyond the usual normal limits. The degree of this abnormality is an indication of the degree of strain on the right side of the heart.

The presence of a good-sized effusion in the pericardial sac causes a markedly enlarged cardiac shadow with a very suggestive form and outline. The shadow is rather triangular with the base at or near where the shadow joins the diaphragm. The two lateral borders are either almost straight, directed inward to the midline at the level of the great vessels where the apex of the triangle is formed, or they may have a single continuous convex curve up to this point. In the latter type, marked general cardiac enlargement may closely simulate it. However, when we see a cardiac shadow of this type we should observe the patient in both the upright and prone positions to

look for a change in the shape, and we should look carefully for the cardiac pulsation under the fluoroscope as well as for physical signs of a pericardial effusion.

Another fairly common x-ray finding in heart disease is evidence of pulmonary congestion. Especially in early left ventricular failure, an x-ray plate of the chest may show evidence of some congestion in the lungs before we are able to detect any definite physical signs of such. Usually this finding is bilateral and such bilateral findings should always make one consider pulmonary congestion due to a failing myocardium.

The last common x-ray finding we wish to discuss is enlargement of the aortic shadow with or without calcified plaques. This finding does not always signify serious heart disease by any means, but should always stimulate us to search carefully for evidence of coronary artery disease. Enlargement of the aortic shadow may of course be due to syphilitic involvement with general dilatation of the aorta or, more commonly, with the production of a localized aneurysm. The enlarged aortic shadow that we have in mind, however, is not associated with syphilis and while there may be a slight increase in the diameter of the aorta, the enlarged shadow is due chiefly to a lengthening and rotation of the aorta so that in the posterior anterior view it shows a marked widening. An oblique view, however, demonstrates clearly that there is very little increase in the actual diameter of the aorta but the large shadow is due more to lengthening and rotation. Such findings are evidence of a fairly marked aortic atherosclerosis and are seen commonly in people past sixty or sixty-five years of age and, not infrequently, in individuals in the late forties, and from fifty to sixty years of age, especially if they have hypertension. A fairly high percentage of patients with these findings will show, at the time of examination or will develop somewhat later, definite evidence of coronary artery disease.

We have omitted many important x-ray signs of heart disease from this discussion and as a matter of fact have presented only some circumscribed phases of cardiovascular roentgenology. We have said practically nothing of the technic of examination. It was our endeavor in presenting this subject to demonstrate the more common x-ray signs of heart disease which may be evident on the usual posterior anterior chest plates that most of us have occasion to examine at frequent intervals. By so limiting our discussion we felt that we would emphasize these common signs and their definite practical value to all of us.

HYPERSENSITIVENESS OF THE  
CONJUNCTIVA AND CORNEA\*

WITH REPORT OF CASE

H. C. KLUEVER, M.D., C. H. COUGHLAN, M.D.  
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Hypersensitiveness is an increased specific reaction capacity to a substance which in a normal person produces little if any disagreeable response. Nearly all tissues of the eye are subject to drug, food or other hypersensitivities. These ocular manifestations always indicate a generalized hypersensitivity, for they are only one expression of a potential body reaction.

Hypersensitiveness itself may not be inherited, but the hereditary tendency to it is supported by evidence and, according to Vaughan,<sup>24</sup> follows the mendelian law as a dominant characteristic. Zinsner and Bayne-Jones<sup>29</sup> state that passive sensitization may occur in the fetus as a result of the passage of antibodies through the placenta, and they suggest that active sensitization also may occur before birth. Sensitization after birth without traceable origin is common and may occur, for instance, through the intestine or the respiratory passages. Dale's theory of anaphylaxis<sup>9</sup> presupposes that the combining of antigen and antibody in sensitized tissues leads to cell injury and the liberation of a poisonous substance, namely, histamine or a histamine-like substance. Lewis and Grant<sup>18</sup> and Hare<sup>13</sup> expanded this theory to explain the skin reactions in hypersensitive human beings.

Vaughan<sup>25</sup> states that ten per cent of our population is allergic. Applebaum<sup>2</sup> agrees with this figure. Cooke and Vander Veer<sup>8</sup> estimated the incidence of hypersensitiveness at approximately seven per cent; they included only persons presenting definite clear-cut symptoms of an outspoken allergic disease. A recent survey<sup>6</sup> conducted under the sponsorship of the Board of Health of Oradell, New Jersey, concluded that only twenty to twenty-five per cent of white families are free of food hypersensitivities. A search of the literature for estimates on the incidence of ocular allergy was disappointing.

With the exception of vernal catarrh, reported cases of hypersensitiveness of the eye are not numerous. Tuft<sup>23</sup> mentions atropine, pilocarpine, butyn and yellow oxide of mercury as drugs which may produce conjunctivitis in sensitive individuals. Biberstein<sup>4</sup> also observed that drugs, commonly used in the treatment of the eye, on occasions give rise to skin irritation; he attributed the reaction to an individual sensitivity to the drugs used. Hansel<sup>12</sup> states that silver nitrate was found to cause

dermatitis. Lemoine<sup>16</sup> reported a case of hypersensitivity to butyn. Stahr<sup>20</sup> observed a case of hypersensitiveness to novocain and cocaine in a woman forty years of age. In 1932 she was given an injection of novocain for pruritus ani; the treatment was followed by a violent skin reaction. During the summer of 1940 a marked hypersensitivity to Russian thistle appeared; desensitization was attempted but after the second injection a conjunctivitis occurred and persisted for six weeks. Desensitization was attempted again in March, 1941 and after the third injection a mild conjunctivitis recurred. The eyes were treated with instillations of adrenalin and cocaine but the inflammation became progressively worse. The extensive swelling of the eyelids which resulted from the use of cocaine subsided within forty-eight hours after the drug had been discontinued.

de Lapersonne<sup>15</sup> was appointed in 1917 by the French Advisory Military Commission to determine whether or not antityphoid vaccination could produce eye complications. He concluded there were a few cases for which there was strong evidence that the eye complications were directly attributed to the vaccine. Keratoconjunctivitis and abscesses of the cornea followed the use of typhoid vaccine by Ginestous<sup>11</sup> and a deep keratitis was observed by Bell<sup>3</sup> after similar vaccination.

Throckmorton<sup>21</sup> followed a case of ocular inflammation precipitated by violent anaphylaxis accompanying the second injection for immunization against typhoid fever. The anaphylaxis occurred in 1919 when the patient was thirty-six years of age and was followed immediately by an acute iritis of each eye. The iritis subsided after four weeks and did not recur until 1935, at which time a second violent anaphylaxis occurred following the use of antitoxin for laryngeal diphtheria. The second attack of iritis was complicated in the right eye by what appeared to have been a keratitis profunda and in the left eye by corneal ulceration; the ocular inflammation persisted for more than a year. Corneal infiltration in 1936 reduced the visual acuity of the right eye to perception of hand movements and that of the left to approximately 20/60. In January, 1941 the vision of the right eye had improved to 20/40 and that of the left to 20/20. Treatment for absorption of the corneal infiltration is still being continued.

Woods<sup>27</sup> reported two cases of keratoconjunctivitis due to corn dust; desensitization with corn extract relieved the inflammation. Conlon<sup>7</sup> and Lemoine<sup>17</sup> each observed allergic conjunctivitis due to various foods; positive skin tests were obtained for the foods suspected. Lagrange<sup>14</sup> saw a case of repeated conjunctival crises in a nine-year-

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old child resulting from contact with a Siamese cat.

Menagh<sup>19</sup> found definite evidence that one may be actually sensitized to bacteria which one may be harboring. Vaughan<sup>26</sup> states that bacterial allergy has been positively proved for animals and that there is very convincing evidence for human beings. Thygeson,<sup>22</sup> Allen and Wood,<sup>1</sup> Burky<sup>5</sup> and others believe the staphylococcus is an important cause of conjunctivitis. Woods<sup>28</sup> suggests that the probable mechanism of conjunctivitis due to staphylococcus toxin may be accounted for as follows: infection with a toxin-producing staphylococcus is accompanied by local absorption of the toxin and resultant tissue hypersensitivity; the absorption of toxin by the hypersensitive conjunctiva results in an allergic inflammatory reaction which by its very nature is a chronic process. Duke-Elder<sup>10</sup> is in accord with this opinion; he states that many of the destructive lesions sometimes ascribed to bacterial poisons are probably allergic responses to bacterial protein. Burky<sup>5</sup> has demonstrated the synergistic effect of staphylococcus toxin; he found that lens extract when used alone produced no hypersensitivity but when combined with staphylococcus toxin resulted in lens hypersensitivity. He suggests that an allergic state to ragweed might be established by an acute sore throat at a time when the air is heavily laden with pollen or to foods by eating a product contaminated with staphylococci, or that a contact dermatitis might be established through a staphylococcus infection of the skin.

It is the purpose of this report to summarize briefly previously published reports and to present further observations. The case which is being presented was not seen by an allergist during the period of hospitalization because consultation was refused. Later, consultation was accepted and the various hypersensitivities were carefully studied.

#### CASE REPORT

H. R., a farmer, thirty years of age, was admitted to Lutheran Hospital on December 6, 1939. He had never been acutely ill but he believed his general health since childhood had not been as good as that of his friends. He had always been easily fatigued; frontal headaches were frequent; nasal obstruction with a thin clear discharge was often annoying and had not been improved although he had received treatment on several occasions.

His father, who died of heart trouble at sixty-five years of age, had been subject to recurrent attacks of asthma which were often precipitated by exposure to flower pollens. His mother also had died of heart trouble, but at sixty-two years of

age. One of two brothers died in infancy and the other suffered from periodic attacks of "sinus trouble" with headaches, nasal obstruction and discharge. An only sister enjoyed good health, never having experienced any symptoms of hay fever, asthma or allergic rhinitis.

Two years prior to admission to the hospital the patient had experienced several mild attacks of itching and redness of his eyes. During the summer of 1939 he had had considerable abdominal discomfort, and, although he had not been acutely ill, an appendectomy was done in September. By October 6, he had recovered sufficiently to assist in harvesting corn and that night the right eye became acutely reddened. On the following day he sought relief from his physician, and a foreign body which looked like soil was apparently washed from the right conjunctival sac. The inflammation increased in spite of local treatment; definite exacerbations followed about one hour after each visit to his physician and seemed to result from the eye drops which were used. Two weeks prior to admission the vision of the right eye began to fail; one week later the eyelids became extremely swollen and soon the swelling extended to the cheek. The left eye, which had not been treated, remained only slightly reddened.

On admission to the hospital the right cheek and eyelids were swollen and red; photophobia and blepharospasm were extreme and the lower eyelid was forced up under the upper one. The skin of the eyelids and cheek was excoriated and exuded a clear serous fluid. The lacrimal passages were patent; the palpebral conjunctiva was velvety, intensely reddened and thickened from long continued chronic inflammation. The bulb was intensely injected and its conjunctiva moderately edematous. A corneal opacity, later shown to be an abscess, measured one and one-half millimeters in diameter and was located in the pupillary area. Two superficial ulcers, each measuring one millimeter in diameter, were located three millimeters below the deep central abscess. The remainder of the cornea was hazy, but biomicroscopy revealed no deposits on its posterior surface. Aqueous floaters were not seen. The conjunctiva of the left eyeball was moderately injected. Further examination of both eyes revealed no other abnormalities.

Conjunctival cultures of the right eye grew countless numbers of hemolytic colonies of *Staphylococcus aureus*. Nasal smears prepared with Giemsa's stain showed eosinophils to be present in great numbers; other cells were almost absent. The red blood cell count was 5,620,000 and the white 9,450; the differential count of 100 cells showed 17 lymphocytes and 83 polymorphonuclear

cells, two of which were eosinophils. The blood Kahn and Kline reactions were negative; general physical examination revealed no abnormalities except those of an allergic rhinitis. The nasal sinuses appeared to be clear.

On December 6 a one per cent solution of atropine was used in the right eye and a violent reaction with marked pain and increase in swelling resulted. Further use of atropine was abandoned. One-half per cent silver nitrate ointment and one-fifth per cent solution of scopolamine hydrobromide were used in the right eye and a two per cent solution of silver nitrate and hot boric acid compresses were applied to the skin of the lids and cheek. After each application of silver nitrate the weeping of the skin and swelling of the eyelids and face increased and on December 9 the further use of silver nitrate was discontinued. During this time the corneal ulcers and the central abscess had remained unchanged. On December 10 White's ophthalmic ointment was cautiously tried. No exacerbation resulted.

Typhoid vaccine was given in doses of twenty-five and fifty million killed bacteria on December 7 and 9, and further injections were then discontinued because the patient complained so bitterly of increased pain of the eye; an intramuscular injection of defatted milk resulted in a similar exacerbation.

The weeping and excoriation of the skin of the eyelids and face on December 10 were much worse than at the time of admission; swelling of the face was marked. The corneal ulcers had advanced but the central corneal abscess remained unchanged. Consultation with an allergist was refused. The sensitivity of the patient to horse serum having been determined negligible, thirty thousand units of staphylococcus antitoxin were administered in divided doses without any untoward reaction. On the following day the pain of the eye was greatly relieved and by December 12, the swelling and the weeping and excoriation of the skin were rapidly subsiding. The number of colonies of staphylococci grown from the right conjunctival sac decreased to none on December 20; an occasional colony reappeared on December 26.

Daily subcutaneous injections of a 1:100,000 dilution of an autogenous staphylococcus vaccine was begun on December 12, with the first dose of one-tenth of a cubic centimeter being increased daily by the original amount; these daily injections were continued as long as the patient remained in the hospital.

By a process of elimination it was determined that wheat and beans increased the swelling and weeping of the skin of the lids and face; they were eliminated from the diet on December 14.

On December 18 the superficial corneal ulcers were healed but the central corneal abscess was advancing and the patient complained bitterly of pain resulting from the slightest movement of the lids. On December 19 the corneal abscess was opened and a small amount of pus was liberated; no foreign body was found. Cultures on blood agar from the abscess showed no growth. A paracentesis of the right eye was also done and followed daily until December 25 by drainage of the anterior chamber.

Mercurochrome was used in preparing the patient for the paracentesis and resulted in a mild recurrence of the inflammation of the skin of the face. All mercurials were, therefore, discontinued and boric acid ointment was substituted for White's ointment. Other suspected sensitivities which had been eliminated included atropine, silver nitrate, typhoid vaccine, defatted milk, beans and wheat. The central corneal ulcer remained unchanged until December 30; then the healing advanced so rapidly that the ulcer was entirely healed by January 8. The patient was discharged from the hospital on January 10.

After leaving the hospital the patient consented to consultation with an allergist. Positive skin tests were obtained for many foods; the greatest hypersensitivity appeared to be for beans, wheat, cucumbers, chocolate, onions, pork and prunes. These and many other milder allergens were removed from his diet. He was advised to avoid dust from alfalfa, oats, clover and sawdust. In all, 58 different offending substances were eliminated. During this period of investigation he had several mild attacks of redness and itching of his eyes, all of short duration and in each instance due to experimentation with his allergens or to an oversight in following his diet. A more severe attack occurred in May, 1940, at which time he began eating asparagus. The right eye remained reddened for two weeks before the sensitivity to asparagus was proved; the ocular inflammation subsided immediately after the vegetable was removed from the diet. Conjunctival cultures taken during this attack grew only an occasional colony of *Staphylococcus aureus*; the eye was not treated. The corrected vision January 25, 1941, was 20/20 O. D. and 20/15 O. S. There have been only occasional and mild attacks of conjunctival redness since the attack due to asparagus. It is of interest to note that the frontal headaches have entirely subsided and the nasal symptoms of obstruction and discharge are no longer annoying.

#### COMMENT

In review of the history of this case the patient denied knowledge of injury to his eye. He had



had similar attacks of redness and itching which had subsided without treatment and he emphasized his opinion that his real difficulty began only after his right eye had been treated with atropine. It is important to note that the corneal lesions were first observed six weeks after the ocular inflammation had begun. These points are stressed because it is our opinion that the ocular lesion was originally a mild allergic conjunctivitis which was aggravated into a violent inflammation by the use of atropine. We saw the patient during several of his mild attacks; the one following the use of asparagus in the diet was particularly pertinent; had atropine been used on that occasion we feel certain that a violent ocular inflammation would have resulted.

Corneal lesions occurring during violent allergic manifestations were observed by Ginestous,<sup>11</sup> Bell,<sup>3</sup> Woods<sup>27</sup> and Throckmorton.<sup>21</sup> These lesions apparently were a part of the allergic reaction and not dependent upon the presence of bacteria in the conjunctival sac. In our case the presence of *Staphylococcus aureus* probably was a definite factor and its toxin may have exerted a synergistic effect as demonstrated by Burky.<sup>5</sup> If this were true one could in part account for the many hypersensitivities exhibited by this case. *Staphylococcus* toxin undoubtedly produced the marked swelling of the lids and cheek and the weeping and excoriation of the skin. After the administration of antitoxin those symptoms rapidly subsided and never recurred. Duke-Elder<sup>10</sup> observes that in allergic individuals the relatively bland proteins liberated in the destruction of bacteria act as powerful irritants to the sensitized tissue-cells. It is quite probable that the reaction to bacterial toxin in our case was of an allergic nature.

#### SUMMARY

1. A case of violent hypersensitiveness of the conjunctiva and cornea is presented.

2. Offending substances included atropine, mercurial compounds, silver nitrate, typhoid vaccine, defatted milk, many foods and probably staphylococcus toxin.

3. The allergic manifestations were complicated by infection with *Staphylococcus aureus*.

4. The administration of thirty thousand units of staphylococcus antitoxin was followed by rapid improvement and almost complete elimination of the offending organism from the conjunctival sac.

5. The corneal lesions seemed to heal only after offending drugs were discontinued and beans and wheat had been eliminated from the patient's diet; hypersensitiveness to these foods was marked.

6. Excellent vision was restored in spite of long continued corneal inflammation.

#### CONCLUSION

The present knowledge of experimental and clinical allergic phenomena of the eye makes it necessary for the ophthalmologist to be aware of hypersensitiveness as an etiologic factor in conjunctival and corneal inflammations.

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#### Discussion

Dr. Carl A. Noé, Cedar Rapids: I think Drs. Kluever, Coughlan and Martin have presented a very interesting case and have made valuable comments. Ocular allergy certainly deserves our most careful

attention. Duggan's recent papers published in the Archives of Ophthalmology would make us believe that allergy plays an important part in iritis, uveitis and retrobulbar neuritis. I think we must admit that as yet we know very little about allergy and therefore our treatment must many times be very unsatisfactory.

I should like to report a case somewhat similar to the one described. Dr. W. J. Foster saw the patient first on November 3, 1937. He was a farmer, twenty years of age, who developed what appeared to be a traumatic keratitis in the left eye after a corn stalk injury. Scopolamine, atropine and White's ointment containing butyn were used. Progress was slow. One month later he developed a drug dermatitis and conjunctivitis which was found to be due to atropine. Medication was discontinued and he became well. Since then he has had three severe attacks of keratoconjunctivitis, each related in some way to working with corn. There were dense corneal infiltrates extending through the entire thickness of the cornea, and covering the major part of its extent. The right eye was affected once. He has become sensitive to scopolamine, butyn and White's ointment. Tests showed marked sensitivity to corn smut and he was given a course of desensitization to this. The drug found best for local treatment was neosynephrin. He was last seen on March 14, 1941, at which time his eyes appeared normal except for a small corneal infiltrate in the right eye.

**Dr. Frank H. Reuling, Waterloo:** Dr. Kluever is to be congratulated for presenting this timely subject to us so clearly. The synergistic effect of staphylococcus toxin and the offending allergen is a very important concept. It brings to my mind the case of a ten-year-old girl whom we treated ten years ago. This child had always had seasonal hay fever accompanied by mild eye symptoms, but on this particular year she presented herself with a mild head cold and both eyes swelled tightly shut and a membrane on the conjunctival surface of the lids, which could be readily peeled off. She was hospitalized and a culture from the membrane revealed *Staphylococcus aureus*. After the use of one-half of one per cent silver nitrate to the lid she developed a massive desquamation of the corneal epithelium. The subsequent use of atropine produced a further flare-up of the lids with an extensive weeping dermatitis of the skin surface of the lids. Argyrol likewise acted as an irritant. The lid pressure was so severe and the cornea was so denuded that we felt her eye sight would be destroyed. All medication except boric acid irrigation was abandoned. She was placed in an allergic-free-filtered room in the hospital and eventually made a complete recovery with normal vision. I have had the opportunity of seeing this girl a number of times during her seasonal hay fever, but she has never had any complication in the subsequent years. Although I did not know it at the time, the severity of this case was probably due to the synergistic action of the staphylococcus toxin and the hay fever allergen.

In our practice we have seen patients who have used dionin at home over long periods of time. It has been a common experience to find such a person suddenly become violently allergic to dionin after they have used it comfortably for a long period of time. These people promptly recover after discontinuing the drug and will frequently give no family history of any allergy. We have had two patients who have become sensitive to pilocarpine. One of these did very badly after a trephine operation because he was also sensitive to atropine which was used just once after the operation.

## THE RELATION OF THE THYROID GLAND TO MENSTRUAL BLEEDING\*

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In 1873 Gull first recognized myxedema as a clinical entity and it is still occasionally referred to as Gull's disease. In 1891 Murray first used thyroid extracts therapeutically. Magnus Levy discovered the low basal metabolic rate in 1893. Recent search revealed a startling amount of literature on the relationship of the thyroid gland to all of the vitamins; the thyroid gland and the growth of albino rats; hyperthyroidism and its effect on blood platelets, etc., but almost a complete dirth on its relationship to menstruation and none of this material was found in journals that are widely read.

It is easy to see why thyroid medication has tended to lag. For a good many years anyone who was bold enough to mention "glands" or to use glandular therapy was looked upon with disdain, and the entire field was felt to be just another form of quackery. Then came the isolation of crystalline thyroxin, followed by theelin. This was the signal for feverish research in all branches of endocrinology. Investigators were intrigued only by the new and have not subjected the thyroid gland, our oldest and most potent endocrine, to the exhaustive experimentation, at least in its rôle of a sex hormone, that other less important substances have received.

Thyroid medication apparently functions in two ways: first, because of the close relationship in the anterior pituitary, of the areas producing gonadotropic and thyrotropic hormones, it is logical to assume that factors influencing one would be likely to influence the other; and, second, because of its general influence on the organism, which is almost all inclusive in its scope. It is a hormone and one hormone influences and modifies every other hormone; and it conditions the cells' receptibility for oxygen, with direct influence on fat, carbohydrate, protein, water and salt metab-

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olism, which in turn means influence, at least indirectly, on every bodily function. The blood cholesterol level is consistently high in patients with myxedema. There is undoubtedly some relationship between cholesterol and the sex sterols. Some authorities feel that the ovary is associated with the metabolism of the sterols, but conclusive evidence is still lacking. Thyroid disease is more common in women than in men. The gland itself is about one-third heavier in the female, all of which is evidence that the thyroid gland has a greater rôle to play in women than in men.

Examination of several new standard textbooks on medicine revealed one short paragraph in one book which mentioned that there were milder forms of hypothyroidism than cretinism or myxedema, but no mention of menstrual disturbances was made. An eminent authority, in his book devoted entirely to the thyroid gland, maintains that myxedema is caused by fibrosis of the thyroid gland and that only a very small amount of thyroid tissue is necessary to maintain the individual at proper thyroid levels. The same author does not mention milder forms of hypothyroidism, but does discuss what he calls hypometabolism. He goes on to point out that this is not related to thyroid disease since thyroid extract has no influence on it.

The classical description of myxedema is a patient with a blank, dull expression, mental and physical sluggishness, obesity, scant dry hair, dry skin and the characteristic non-pitting edema. The patient with hyperthyroidism, on the other hand, is nervous, irritable, is losing weight, has an enormous appetite, tremor, fast pulse and increased pressure. These are the concepts generally held by most internists.

Obstetricians and gynecologists have for some time recognized clinically a milder degree of hypothyroidism than either cretinism or myxedema and have had gratifying clinical results in the treatment of various menstrual disorders, from the administration of thyroid extract, when other causes of the disorders were not apparent. Many of these patients had basal metabolism rates which the internist would insist were normal. In this group the basal metabolic rate may vary from minus fifteen to plus five. The general symptomatology is unreliable. The patient may be obese or thin, sluggish or nervous, and her menstrual complaint may be any of the menstrual abnormalities. At the same time with exactly the same symptomatology the basal metabolism rate may be from plus five to plus twenty-five or thirty. The only reliable method to ascertain which are hypothyroidism and which are hyperthyroidism is the determination of the basal metabolic rate.

It has been recognized for some time that numerically the great majority will fall into the hypothyroid group. I wish to emphasize, however, that patients with either hypothyroidism or hyperthyroidism of even mild degree may have menstrual disorders, sterility and abortion and that it is necessary to differentiate between the two in order to obtain satisfactory clinical results.

Two recent cases illustrate my point. The first was an unmarried girl, twenty years of age, thin, nervous, irritable, poor appetite and easy fatigability. She had been flowing constantly for three months. Pelvic examination was essentially negative. She had been treated with "shots" at intervals with no result. Dilatation and curettage were performed and no endometrium was obtained. The basal metabolic rate was then found to be plus thirty. Administration of Lugol's solution resulted in normal menses. At the end of three months, Lugol's solution was gradually reduced. The periods became longer and more profuse. The basal metabolism was rechecked and found to be plus thirty-five. A thyroidectomy was performed and the menses have been entirely normal since that time. The lack of endometrium in some cases of menorrhagia occurs occasionally and there has been no adequate explanation. Routine basal metabolic readings may reveal a mild or moderate hyperthyroidism to be responsible, as in this case. I am at a loss to explain the altered physiology involved. The second case had exactly the same history and pelvic findings. Dilatation and curettage were performed and a large amount of endometrium was obtained. The pathologist's report was hyperplasia of the endometrium. The basal metabolic rate was determined and found to be minus fifteen. Administration of thyroid extract resulted in a return to normal menstruation.

Amenorrhea or oligomenorrhea has always been associated with hyperthyroidism, and especially thyrotoxicosis. It is just as true that mild hypothyroidism as well as myxedema may result in amenorrhea. Dysmenorrhea often responds to small doses of thyroid extract. I have had no experience with dysmenorrhea in hyperthyroid patients and have been unable to find any references to it. Menorrhagia is a poorly understood symptom. When endometrial biopsy was first advocated, we felt that here at last we had a simple procedure which would guide us intelligently in treatment. Endometrial biopsy has lasted just long enough to prove that menorrhagia may occur with any type of endometrium. Until the actual bleeding surface is adequately studied there will be many unanswered questions relative to menorrhagia. Examination of sections of a seventeen-

day fetus showed blood filling the glands themselves, acting at least temporarily, as sources of maternal blood for the ovum until the regular blood lakes could be established. It has been taught for years that the bleeding originated beneath the endometrial surface. The endometrial capillary pattern has not received the attention it deserves, nor the fragility of these capillaries or the effects of pituitary, ovarian, adrenal or thyroid hormones on that capillary pattern or fragility. We have studied everything but the bleeding in menorrhagia. Hypothyroidism, mild or moderate, may certainly result in menorrhagia, but so may hyperthyroidism, both mild and moderate. Sterility and abortion are commonly due to hypothyroidism, but in a smaller number are also due to hyperthyroidism. Because the basal metabolic rate is lowered in early pregnancy, roughly corresponding to the period of nausea and vomiting, small doses of thyroid extract have been suggested as a therapeutic measure. It has proved to be of little value in my hands.

There is some evidence pointing to an endocrine cause of pre-eclamptic toxemia and eclampsia with the suggestion that all pregnant women showing any evidence of endocrine dysfunction, obesity, hirsutism, pituitary, masculine and immature types, etc., should receive small doses of thyroid extract during early pregnancy to prevent pre-eclamptic toxemia and eclampsia. There is not enough evidence accumulated as yet to draw worthwhile conclusions.

The technic of thyroid medication is worthy of mention. Persons who are most deficient in thyroid substance do not tolerate large initial doses. It is wise to start the patient on one-half grain of desiccated thyroid extract a day. This should be increased by one-half grain each week until symptoms of over-dosage—palpation, rapid pulse, nervousness, etc.—are experienced. By reducing the dosage one-half grain the proper amount is approximated. One should remember that maximum response does not take place for about sixty days. Many disappointments in thyroid therapy are due to giving a dosage of one to one and one-half grains a day, finding that it is not tolerated and discontinuing the drug.

Thyroid preparations also need a word. U.S.P. thyroid extract contains not more than 2.2 per cent nor less than 1.8 per cent iodine; a variable product will prove unsatisfactory. Lilly, Armour and Squibb conform to this standard. Parke, Davis and Company has for some time produced a thyroid extract with 3 per cent iodine content. Burroughs-Wellcome uses a different method of standardization entirely. One may say roughly that one and one-half grains of U.S.P. thyroid

extract corresponds to one grain of Parke, Davis or five grains of Burrough-Wellcome preparation. Failure to recognize these facts will certainly result in confusion.

The warnings which surgeons have sounded for years, in regard to the administration of Lugol's solution to hyperthyroid patients, still hold true. However, we are primarily concerned with mild hyperthyroidism. It is perfectly safe to administer five to ten drops of Lugol's solution three times a day to this group of patients.

Therapeutically it must also be remembered that hormone deficiencies may be multiple. If hypothyroidism is present in a patient with estrin deficiency, administration of thyroid extract as well as estrone will result in a more satisfactory response.

In closing I wish to re-emphasize that patients with menstrual disorders, sterility and abortion, and with basal metabolic rates slightly below normal will respond to thyroid extract; if the rate is slightly elevated Lugol's solution is the drug of choice; symptoms, both menstrual and general, may be identical in the two groups; and numerically in patients with menorrhagia, amenorrhea, dysmenorrhea, sterility and abortion, hypothyroidism prevails, but hyperthyroidism is also common.

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#### DIAGNOSIS OF GALLBLADDER DISEASE\*

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The diagnosis of gallbladder disease is today, and has been for many years, a topic of much medical interest. The very satisfactory results from properly chosen therapy, as well as frequent difficulties, stimulate our interest in accurate diagnoses.

From a pathologic point of view, the lesions of the gallbladder are numerous. From a practical viewpoint, a consideration of gallbladder disease is a consideration of cholecystitis. MacCarty<sup>19</sup> has reported the pathologic findings in 29,701 surgically removed gallbladders: more than 99 per cent of these showed either chronic or acute inflammation; all other lesions together represented less than one per cent. Furthermore, tumors and other pathologic changes are almost always accidental findings at operations undertaken for cholecystitis. Diseases of the bile ducts,



although closely related, are being largely omitted from this discussion since they are a distinct entity. The topic of acute cholecystitis will be taken up separately after we consider the chronic phase.

The typical syndrome of chronic cholecystitis includes so-called gaseous dyspepsia, biliary colic, residual soreness after colic, and occasionally jaundice in a person who fits the aphorism "fair, fat and forty." This picture is very familiar and has been diagnostic of gallstones or of serious changes without stones for decades. The epigastric fullness, heartburn and belching, which begin shortly after or even during meals, and the likelihood of such articles as fried foods, fats, gravies, roughage and spices to produce or exacerbate these symptoms—all these characterize the dyspepsia of gallbladder disease. Physicians of twenty years ago whose diagnoses had to be entirely clinical, aside from the finding of an occasional gallstone in the stools, also laid stress on indigestion occurring after alcoholic excesses, jolting travel, menstruation and emotional disturbances.<sup>1</sup>

Biliary colic is by far the most diagnostic symptom. It also is helpful in deciding on treatment, for current statistics indicate that those who have colic do well after surgery. Biliary colic is typically paroxysmal, sudden in onset and termination, and very likely to be at night. The pain is severe, often requiring morphine, and located in the epigastrium or right upper quadrant with reference to the right subcapsular area. In the absence of inflammatory process, the duration of pain is relatively short, from a few minutes to a few hours, even without morphine being used. Nausea usually accompanies the pain, and the earlier authors<sup>11</sup> and <sup>14</sup> speak of the attack being terminated by vomiting. After an episode of biliary colic, residual soreness and tenderness in the region of the gallbladder are found from twenty-four to forty-eight hours. From ten to twenty per cent have jaundice of some degree;<sup>14</sup> the presence of jaundice after colic is certainly additional evidence, but the absence of jaundice can hardly be a point against the diagnosis of cholecystitis. Biliary colic is usually associated with gallstones, but true colic does occur in their absence. In fact, it has been estimated that one-third of the patients with non-calculous cholecystitis have colic.<sup>17</sup>

Much personal interest and enlightenment have been derived from a review of the mechanisms by which these symptoms are produced. Zollinger<sup>21</sup> published in 1933 his observations on six

patients in whose gallbladders balloons were placed at the time of surgery, and with two of these a balloon was also placed in the common duct. All six had stones. He noted that distention of the gallbladder gave rise to a deep epigastric discomfort similar to that associated with the indigestion of biliary disease, but more severe. Nausea and vomiting did not occur. Localized right upper quadrant pain was observed in one case when the distended gallbladder touched the parietal peritoneum. On the other hand, distention of the common duct was much more painful and was accompanied by nausea and vomiting. Of further interest is the fact that posterior projection of the pain was not obtained by either method, and Zollinger concluded that this radiation probably resulted from a peritoneocutaneous rather than a viscerocutaneous reflex. Therefore, it seems well established that the sensation of epigastric fullness which characterizes biliary dyspepsia is caused by actual distention of, or at least increase of pressure within, the gallbladder. The belching and bloat are due to reflex pylorospasm or even to retrograde peristalsis of the duodenum and pylorus.

The production of gaseous dyspepsia thus depends on intracystic pressure and reflex motor disturbance in the stomach and duodenum. Biliary colic, however, apparently involves the common duct as well as the gallbladder. According to a current explanation, colic is produced when the gallbladder contracts against a closed sphincter of Oddi, thereby raising both intracystic and intraductal pressures.<sup>17</sup> The severe pain, according to Zollinger's findings, is due to common duct distention. It has been amply demonstrated that the sphincter of Oddi may contract firmly enough to prevent the gallbladder from emptying.<sup>9</sup> This explanation does not include gallstones in its mechanism and therefore applies with equal force in their presence or absence. Localization of pain in the right upper quadrant and posterior projection probably result when the distended gallbladder touches the parietal peritoneum. The residual soreness found after colic probably depends upon a deep inflammatory reaction. Jaundice may indicate the presence of a stone in the common duct, but may well be due to pressure of the distended gallbladder on the common duct, or to hepatitis only.

To recapitulate our textbook picture of chronic cholecystitis, then, we have a middle-aged overweight individual, usually female, complaining of epigastric fullness, belching, food selectivity, heartburn and having attacks of a definite form of colic which are followed by residual soreness and perhaps jaundice. Variations in this picture

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are far from infrequent. Most men of experience have seen young people with gallstones, including children in their teens. It has been suggested that organic biliary disease is overlooked not infrequently in children because it is not thought of.<sup>16</sup> A study of cholecystitis in elderly people (those over sixty years of age) made by Coors<sup>4</sup> reveals these points of difference in symptomatology: first, there is a history of symptoms in middle life followed by a quiescent period before reappearance in old age; and second, their pain less often radiates to the back.

Variations in the location of the pain of organic biliary disease can well lead to confusion. The pain not uncommonly is left-sided in patients whose gallbladder is normally situated. This peculiar reference is stated to be most frequently seen in phlegmatic persons. Again, biliary pain may be entirely above the diaphragm, perhaps sub-sternal in location and mimicing angina pectoris. The colic at times originates in the back, rather than being referred there, and closely approximates the location of renal pain. An interesting point with regard to cases of situs inversus is that the pain of cholecystitis is felt on the left side, over the gallbladder, in contrast to appendicitis in those reversed individuals in whom the pain is felt most often on the right side.<sup>20</sup>

Many patients, including some with stones, do not have colic, and present themselves with a more or less typical story of gaseous dyspepsia and food selectivity. These complaints, however, are hardly specific enough to make the diagnosis of themselves, and should rather serve as a starting point for further investigation by clinical observation and by laboratory procedures. Of all the laboratory aids, cholecystography is universally regarded as being the most valuable. The accuracy of the x-ray examination of the gallbladder is high. The actual demonstration of stones is obviously valuable. A non-functioning gallbladder in a patient whose complaints suggest cholecystitis has been shown statistically to indicate actual disease with about 90 per cent accuracy.<sup>8</sup> Most non-functioning gallbladders contain stones. On the other hand, when the roentgenologist reports "a normally functioning gallbladder without stones" it behooves one to reconsider his diagnosis, for the accuracy of this finding is as high as the others.

Duodenal drainage as a diagnostic measure has some very enthusiastic adherents. The writer cannot speak from experience on this point; it might be noted that proponents point out the necessity for a controlled technic and especially for skilled microscopic interpretation of the bile obtained.

The various procedures for the demonstration of jaundice and for measuring liver function are usually mentioned in this connection; these have their importance, but hardly contribute much to the diagnosis of cholecystitis. Gastric analysis is neither typical nor consistent enough to give real help.

When one looks up the differential diagnosis of chronic cholecystitis, the number of conditions mentioned is almost appalling. Here is a list of many conditions which may simulate cholecystitis; the common denominator of all of these is abdominal pain.

1. Peptic ulcer, especially duodenal.
2. Appendicitis.
3. Spastic colon.
4. Carcinoma of stomach or colon.
5. Various liver diseases, especially cirrhosis.
6. Abdominal pain in allergic individuals.
7. Diaphragmatic hernia.
8. Right hydronephrosis.
9. Hemolytic icterus.
10. Angina pectoris.
11. Lead colic.
12. Tabetic crisis.
13. Pleurisy.
14. Neurogenic or neuromuscular pain.

A few of these are common sources of error and merit more attention. Duodenal ulcer, particularly the posterior perforating type, can produce attacks of pain which very closely mimic biliary colic, including posterior radiation. More commonly peptic ulcer imitates biliary disease by dyspeptic symptoms. A further difficulty is the finding of both of these in the same individual. Mentzer<sup>13</sup> reported that in a series of 612 cases with varying degrees of cholecystitis, 29 per cent had also duodenal or gastric ulcer. It is especially with regard to this problem of ulcer and gallbladder that the gastro-intestinal x-ray examination contributes much diagnostic help. Valuable as x-ray studies of the gallbladder are, it has been well stated that if the choice is between these two procedures in such a problem, we should choose the gastro-intestinal series. No test is perfect, however, and there are cases in which trial of a strict ulcer regime may be the only differentiating factor. Few benign ulcers fail to heal on such care and cholecystitis is not often benefited by the ulcer treatment. Relief from the use of soda or other alkalies is usual in either condition, but in gallbladder disease, relief takes place as a rule only when the alkali causes belching. On the other hand cholecystitis may simulate ulcer distress; careful questioning in this situation often reveals



that the regular time relationship of an ulcer is not constantly present. Night pain is rarely found in an uncomplicated ulcer.

Appendicitis is another condition which simulates gallbladder involvement, especially when the appendix is retrocecal, or when the liver and gallbladder are displaced downward as in visceroposis. Elderly people commonly have visceroposis, and thus appendicitis easily may be erroneously diagnosed as cholecystitis in the aged.<sup>4</sup> Co-existence of appendiceal infection of some degree with cholecystitis is almost routine; Mentzer<sup>13</sup> found pathologic evidence of this in 68 per cent of the previously quoted studies of gallbladder disease. Lack of colic and sharper localization serve to distinguish appendicitis.

A spastic colon is capable of producing a very good gallbladder picture with right-sided pain, dyspepsia and constipation. Snell<sup>17</sup> states that this is probably the hardest differential diagnosis in this field. People with spastic colon often have pylorospasm, and have restricted roughage and fatty foods in an attempt to control an associated migraine. Diagnostic points are: first, the history; bowel distress is likely to be felt elsewhere than the right upper quadrant at times, may be associated with desire for defecation, and be relieved by passing feces or flatus; and second, roentgenologic studies of the gallbladder and bowel.

The problem of abdominal pain in allergic individuals has been mentioned in the literature several times, especially when a food allergy seems to give rise to the pain. Necheles, et al.,<sup>15</sup> showed a faster emptying time by cholecystography in such individuals when a food was eaten to which the patient was allergic. This suggests that biliary dyskinesia might be the source of confusing abdominal pain in allergic people.

Diaphragmatic hernia has been noted as another rare imitator of cholecystitis; the resemblance is stated to be very close. X-ray examination with the barium meal would be diagnostic in this case also. Right hydronephrosis is still another condition whose pain may simulate biliary colic. Diagnosis here is mainly a matter of considering the possibility and instituting urologic investigation. Crises of hemolytic icterus, with abdominal pain, gastric symptoms and jaundice can readily give rise to a diagnosis of cholecystitis. In this connection, it is well to remember that a high percentage of patients with hemolytic icterus do develop gallstones, probably as a result of increased excretion of bile pigments. Angina pectoris may suggest biliary colic when the pain is abdominal;

a careful, painstaking history is of major importance in making this distinction.

With all these differential possibilities, there is no sure path or perfect routine; an awareness of these many imitators and of the variations in the clinical picture of cholecystitis is worth far more than the routine use of any procedure or test. Brown<sup>19</sup> of Baltimore has been widely quoted concerning his estimate that our diagnostic accuracy in cholecystitis can reach 90 per cent. Co-existence of cholecystitis with appendicitis, ulcer or coronary artery disease is certainly a factor many times when the diagnosis is most confusing.

The problem of acute cholecystitis deserves separate consideration. Those who have this condition are much too ill for most laboratory procedures and hence the diagnosis is more largely clinical than with the chronic phase. The patient with acute cholecystitis generally has some past complaints suggestive of biliary disease; this is to be expected since nearly all patients with acute inflammation of the gallbladder have stones. Pain, nausea and vomiting are almost universal symptoms at the onset. The pain commences suddenly, beginning in the epigastrium and radiating posteriorly, or perhaps to the tip of the right shoulder; the long duration of pain as well as the inflammatory features suggest that the attack is not an ordinary biliary colic. Vomiting is usual at the onset; when persistent it is suggestive of common duct obstruction. According to McClure,<sup>12</sup> localized right upper quadrant pain is found in 95 per cent of the cases, jaundice in 25 per cent and chills in 20 per cent.

On examination the patient with acute cholecystitis is seen to be acutely ill, red-faced, complaining of pain and tossing in bed. Fever of varying degree is present, and there may be jaundice. Localized right upper quadrant tenderness with some muscle spasm is nearly universal, and the distended gallbladder may be palpable. Basal râles in the right lung can be present without pulmonary disease;<sup>2</sup> this is probably due to elevation and partial immobilization of the right half of the diaphragm.

Evaluation of the degree of involvement of the gallbladder is frequently desirable, particularly when non-operative treatment is contemplated. Such evaluation is uncertain at best; just as a ruptured appendix may have a white blood cell count of 5,000 and a clean case one of 18,000, so these same indicators are no more infallible for the acutely inflamed gallbladder. Clute<sup>2</sup> distinguishes two stages in the progress of acute

cholecystitis: Stage 1 is obstruction of the cystic duct; and Stage 2 is interference with blood supply and impending gangrene. The stage of gangrene is of course an indication for immediate surgery. In Stage 1 (obstruction to the cystic duct only) the mouth temperature is typically 100 degrees or less and the white blood cell count 12,000 to 15,000. Temperature over 100 degrees and a white blood count of 20,000 or more strongly suggest that the impending gangrene of Stage 2 may be present.

The differential diagnosis of acute cholecystitis embraces fewer conditions than the chronic. Those to be discussed are: perforated ulcer, acute appendicitis, pancreatitis and coronary occlusion. Perforated or perforating ulcers may be confusing, especially when posterior radiation of pain is present. The past history as to amount and type of indigestion is often of great help. The patient with perforated ulcer is pale, sweating, presents a picture of shock and lies very quietly; one with acute cholecystitis presents a more toxic, febrile appearance and tosses about. Board-like rigidity is as unusual for acute gallbladder inflammation as it is typical for a perforation. Lastly, a flat plate of the abdomen in the sitting or left lateral position may show a diagnostic gas bubble. Acute appendicitis is not so likely to confuse one. In appendicitis there is usually an area of relaxed rectus muscle above the point of maximum tenderness.<sup>2</sup> Pancreatitis in some degree is so often co-existent with acute cholecystitis that differential diagnosis is hardly possible. The extreme picture of grave shock and great abdominal pain seen in acute hemorrhagic pancreatitis would not readily be confused with gallbladder disease.

Most disturbing to the writer is the problem of coronary occlusion, for surgery in the presence of this grave cardiac condition usually ends fatally. The value of past history, including Graham-Cole tests and of electrocardiograms, in making this distinction is somewhat lessened by the frequent co-existence of the two diseases. In addition to the possibility of a chronic electrocardiographic change accompanying acute cholecystitis, another factor requiring evaluation of the electrocardiogram is the delay in production of changes when myocardial infarction has actually taken place. Nevertheless, a typical tracing of coronary occlusion or progressive changes in serial studies is so significant that this procedure should be used whenever available. Evidences of cardiac involvement found on physical examination may prove decisive. A pericardial friction rub can be expected in about one-third of the cases of coronary occlusion; when present it is a sign of great value.

Other evidences of cardiac abnormality are coronary heart failure as manifested by dyspnea, ashen cyanotic pallor, falling blood pressure and collapse, and early congestive heart failure, shown by orthopnea and bilateral pulmonary edema. Chills are frequently found with acute cholecystitis, but are most unusual with coronary disease. The amount of opiate necessary to control pain provides another point of value. Excessive doses of morphine are much more likely to be required in coronary occlusion; ordinary doses are usually effective with biliary pain. Abdominal rigidity and tenderness are more impressive with the acute abdominal condition. Again, let it be remembered that leukocytosis and temperature elevation are commonly found in coronary occlusion. As a last ditch if no adequate decision can be made it is far better to err toward the diagnosis of heart involvement, since the majority of cases of acute cholecystitis do fairly well with delayed surgery or no surgery at all.

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PRACTICAL APPLICATION OF  
OBSTETRIC ANALGESIA\*CECIL W. SEIBERT, M.D.,  
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It has been almost one hundred years since the obstetrician was forced to quote from Genesis in defense of obstetric analgesia in answer to an outraged public and irate church group. The history of obstetric analgesia is a strange and fascinating one, beginning as it does with a quotation from the Bible, hanging in the balance on the wish of a queen, rushing into prominence with a method called "twilight sleep", falling into disrepute and rising again with one method here, another there, first one drug and then another gaining favor.

The problem of obstetric analgesia differs greatly from that presented by surgical anesthesia. For surgery, anesthesia must be complete and relaxation must be adequate. The body has no appointed task to perform and the time of operation is limited. This is not true in obstetrics. The pain must be relieved over a long and rather indefinite period of time. During this period the body metabolism must be carried on at a normal rate and prolonged and difficult work must be done. At the end of the first stage the patient must not only be sufficiently awake to cooperate with bearing down effort, but must also be in condition to take additional inhalation anesthesia. The ideal obstetric analgesia must meet the following requirements:

1. It must relieve all or most of the pain of labor.
2. It must not produce undue excitement in the mother rendering her incapable of cooperating in the second stage.
3. It must not affect the respiratory center of the infant, rendering it incapable of function soon after birth.
4. It must not increase postpartum bleeding.

Unfortunately we have no drug or combination of drugs which fulfills all of these requirements. This fact is further borne out by the long list of analgesic drugs and methods in use at the present time. Hellman<sup>1</sup> has surveyed critically the various methods of analgesia in use during the past ten years. A brief resumé of these methods seems advisable.

*Nitrous Oxide:* This gas has not been extensively used in America. The main objection has been the cost and the time-consuming factor as far as the anesthetist is concerned. Various ingenious machines have been devised with which

the patient may administer the gas herself, but these have not been satisfactory for anything like universal use. When used, the patient should receive at least 15 per cent oxygen with 85 per cent nitrous oxide. Any further reduction of the oxygen in the mixture is likely to produce an anoxemia in the mother which is dangerous to the infant. When given late in the first stage and with second stage pains following some other method of analgesia given earlier in labor, nitrous oxide-oxygen mixture is an ideal analgesic from the standpoint of the patient.

*Scopolamine:* This drug alone has not been a satisfactory analgesic agent. The dosage necessary to obtain analgesia closely approaches the toxic level. When given in large doses amnesia is produced to a high degree, but extreme restlessness is frequently an objection. When given in smaller doses in conjunction with other drugs it is frequently a valuable adjunct.

*Paraldehyde:* This drug has become rather popular in the past five years. Given alone or in combination with the barbiturates it is an effective and safe analgesic. The margin of safety is wide and it exerts little influence on the fetal respiratory center. It does have one drawback, namely a disagreeable and pungent taste and odor. Given rectally it is very irritating to the rectal mucosa and often expelled unless given very rapidly. Following this mode of administration rectal examinations cannot be done for at least two hours.

*Morphine and Related Compounds:* This drug and its derivatives have long been favorites with many men. Morphine in combination with repeated doses of scopolamine was the original "twilight sleep" as introduced into this country from Germany twenty some years ago. It has recently fallen into some disrepute because of its supposed depressant effect on the fetal respiratory center. It is generally agreed that morphine should not be given when delivery is anticipated within four hours after its administration. This makes it especially unsatisfactory for use in the parous woman.

*Ether:* The Gwathmey technic is one of the oldest methods of analgesia. In well-controlled series where adequate special equipment and nursing care are available the results have been excellent. However, rectal instillations are messy, the mixture often being expelled. As with other rectal medication given during labor it is impossible to follow the course of labor with rectal examinations.

*Barbiturate Compounds:* In the past ten years the barbituric acid derivatives have sky-rocketed to unprecedented popularity. This is understandable when one considers the ease of administration

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and the relatively high percentage of satisfactory analgesia and amnesia obtained. What constitutes a reasonable dosage or adequate combination of drugs is difficult to extract from the maze of literature which has accumulated. These compounds depress not only the higher centers, but also have a depressant action on the respiratory center. The reaction on the fetus then, is not only direct, by means of placental transmission, but can take place through respiratory depression and anoxia of the mother if the dosage is excessive. The action of the barbiturates on uterine muscle in animal experiments both *in vitro* and *in vivo* has been found to be depressing. In the human uterus in labor this effect is very transient and of no consequence. The use of morphine or related compounds with barbiturates is very unsound since both drugs are respiratory depressants. This effect is apparently accentuated in combination. When first used, the longer acting barbiturates such as amytal and sodium amytal were most popular. However, in the past five years the shorter more rapid-acting drugs have gained in favor. Chief of these is sodium pentobarbital. The doses which were first recommended seem as a whole to be excessive, the trend now being toward smaller initial and total dosages. The disadvantages of the massive doses are a marked tendency to extreme restlessness and excessive excitement, often necessitating operative termination of what would have otherwise been a spontaneous delivery, and the rather severe depressant effect on the fetal respiration.

From the above brief summary of the various drugs used for analgesia one quickly arrives at the conclusion that the entire question is in more or less of a turmoil. Harm has unquestionably been done in many instances by the injudicious use of drugs in excessive doses. Montgomery<sup>2</sup> has pointed out the inherent dangers of any obstetric analgesia given in too great an amount. He has cited a number of cases in which patients have died suddenly following delivery from marked respiratory depression. He also warns of the dangers to the infant from respiratory depression, and brings up the question of possible latent effects due to prolonged apnea at birth.

Fluhmann<sup>3</sup> has also warned against the dangers of fetal asphyxia. I quote, "The depressing effect on the respiratory center of birth analgesics given in greater than pharmacologic doses bears a direct relationship to the degree of apnea. The extent of the apnea has a direct relationship with the severity of the cerebral symptoms after birth. The severity of the cerebral symptoms is in direct relationship to the amount of damage to the brain

tissue. From these relationships it appears that analgesics given in greater amounts than the pharmacologic dosage may in many instances be the causative factor of fetal anoxemia with resultant cerebral damage in the infant."

In studying the various technics recommended one usually finds that they have several things in common. They are almost universally complicated, calling for restraining beds and special nurses in constant attendance. Special apparatus for resuscitation of the infant is also usually mentioned as being desirable. Because of the ominous warnings and the difficulty in carrying out the various technics the average man practicing obstetrics in the home or the small general hospital has been somewhat prone to abandon any attempt at analgesia. The author feels that this is not necessary. It has been my experience that by a judicious use of an analgesic in moderate doses one is able to control the discomfort of the first stage without producing undue excitement and without any appreciable depression of fetal respiration.

To begin with one must not attempt to get a "painless labor". It is wise to discuss the matter frankly with the patient beforehand, telling her that labor is unpleasant but that she will be given the greatest degree of relief as is compatible with the safety of her and her baby. The next step is to determine the drug or combination of drugs to use. It is much better to acquaint oneself thoroughly with one method and gain a large experience with it than to be constantly changing and never become thoroughly experienced with any. Because of their simplicity of administration and relatively high percentage of satisfactory results sodium pentobarbital and scopolamine or morphine and scopolamine are the drugs of choice. Because morphine and its derivatives have proved to be more depressing to the fetus than the barbiturates I prefer the latter.

At the onset of labor the patient is prepared and given a hot soap suds enema. As soon as active labor is established, as evidenced by regular contractions and effacement or dilatation of the cervix, the patient is given three grains of sodium pentobarbital, followed in twenty minutes by a hypodermic injection of 1/200 grain of scopolamine. The room is darkened and kept quiet and the patient disturbed as little as possible. The husband or other relatives are allowed to remain in the room but are cautioned not to arouse the patient. Within a period of thirty minutes the patient is sleeping quietly between her pains. With each contraction she arouses momentarily, will turn in bed and may complain but as soon as the



pain leaves she again drops back to sleep. If the first stage is prolonged or as soon as the patient is no longer resting between pains, the pentobarbital is repeated, grains one and one-half. As a rule the scopolamine is not repeated. If the patient is nauseated the second dose of pentobarbital may be given rectally. If the parturient is larger than usual the initial dose of pentobarbital may be grains four and one-half, but this is never exceeded. Anything short of an initial dose of three grains is futile. Too small a dose initially even though it may be repeated several times, as a rule, gives very poor results.

At the onset of the second stage the patient is moved to the delivery room. By this time the analgesic action has disappeared somewhat and the patient is awake and able to cooperate with bearing down efforts. With each pain she is given several breaths of 80 per cent nitrous oxide and 20 per cent oxygen and told to bear down only as she has the desire. If nitrous oxide is not available open ether is a fairly satisfactory substitute although its action is too slow for the patient to receive the maximum benefit before the pain is gone.

For the actual delivery the patient may be given gas oxygen, open ether or the above may be combined with perineal block. Any repair work may be done under general anesthesia or one per cent novocain infiltration. In this way the patient receives a minimum of general anesthesia before delivery and the infant is practically never affected.

Recently a new barbiturate has been introduced under the name of delvinal sodium. My experience with this has been limited, but in a small series of cases it has impressed me as being worthy of serious consideration. Plans are now under way for a careful study and evaluation of this drug.

The above described technic is simple, calls for no extra nursing care and can be carried out in any small hospital or in the home. If carried out with any reasonable degree of care the results will be good for both mother and baby, and the physician will be well repaid for the small amount of extra time and effort expended.

#### SUMMARY

1. Obstetric analgesia is still an open question. No drug, combination of drugs or technic yet discovered is ideal.

2. The physician must keep in mind that definite harm can be done, and he must avoid excessive dosage unless he has at his command adequate equipment and nursing personnel.

3. A simple technic has been described which can be carried out in any home or small hospital.

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## THE DECREASING MORTALITY RATE OF APPENDICITIS

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There has been much written, and perhaps more spoken, in the last decade concerning the increasing mortality rate of appendicitis. A few reports, however, and the present study of appendicitis in Cedar Rapids indicate a definite reduction of the mortality rate of appendicitis in the last decade in the United States and in Cedar Rapids. It appears that there has also been less written in the last few years.

As long ago as 1932, Bower<sup>1</sup> had reported a definite reduction of the death rate of appendicitis in Philadelphia, which was considered a result of the educational campaign begun in 1928. At this time he reported a decrease from 5.97 in the years 1928 and 1929, to 4.81 in 1930. Bower<sup>2</sup>, again in 1939, reported that the prophylactic campaign had resulted in a reduction of the number of patients with perforated appendicitis admitted to twenty-eight hospitals in Philadelphia, with a corresponding reduction in the mortality rate of 5.97 in 1928 and 1929 to 3.54 by 1938. He further stated: "but in the last four years the mortality has not been materially reduced." Barrow<sup>3</sup>, in a recent editorial, has called attention to the gradual reduction of deaths from appendicitis in the United States since 1930, when the rate was 15.3, to a rate of 11.9 in 1937. The Metropolitan Life Insurance Company<sup>4</sup> reports that their adjusted death rate for appendicitis in 1940 was 8.9 per 100,000. This is the lowest on their records and represents a decline of nearly 40 per cent from the high rate of 14.4 in 1929. Reports from the United States Bureau of Census show a steady decline in the death rate of appendicitis in the United States since 1930, when the rate was 15.3 per 100,000 population. The rates for each year are as follows:

1930 .....	15.3
1931 .....	15.2
1932 .....	14.2
1933 .....	14.1
1934 .....	14.3
1935 .....	12.7
1936 .....	12.8
1937 .....	11.9
1938 .....	11.0

In Cedar Rapids there were fifteen deaths from appendicitis in 1930. Ten years later, in 1940, there were nine. The population of Linn County has increased from 82,336 in 1930 to 89,142 in 1940. If the death rate had remained the same there should have been sixteen deaths from appendicitis in 1940 instead of nine. If the correction for this increase in population is made, the mortality rate of appendicitis has been reduced about 44 per cent in the last decade. The number of deaths from appendicitis in Cedar Rapids, including simple appendectomies for the past ten years is as follows:

1930 .....	15
1931 .....	15
1932 .....	13
1933 .....	13
1934 .....	12
1935 .....	15
1936 .....	12
1937 .....	10
1938 .....	7
1939 .....	11
1940 .....	9

The morbid anatomy of the appendix in these deaths is shown in Table I. In those recorded as "abscessed" the appendix was not removed, while the perforated ones may have been abscessed but the appendix was removed and examined. The number of appendectomies in St. Luke's Hospital, including many incidental ones, for the past twelve years are shown in Tables II and III. Many incidental ones are included because many were removed with small pieces from ovaries or opera-

TABLE I  
Morbid Anatomy of the Appendix in Deaths from Appendicitis  
in Cedar Rapids—1929 to 1940

Condition of Appendix	Number of Deaths	Percentage of Deaths
Acute.....	15	11.3
Gangrenous.....	39	29.3
Perforated.....	27	20.4
Abscessed.....	26	19.9
Chronic.....	6	4.5
Scarred.....	12	9.0
Negative.....	7	5.3
Totals.....	132	99.7

TABLE II  
Mortality of Appendicitis in St. Luke's Hospital  
1929 to 1936 Inclusive

Condition of Appendix	Number	Percentage of each	Deaths	Death Rate	Percentage of Deaths
Acute.....	663	30.0	9	1.3	16.0
Gangrenous.....	140	6.3	13	9.2	23.2
Perforated.....	86	3.8	12	14.0	21.4
Abscessed.....	39	1.7	9	23.0	16.0
Chronic.....	109	4.5	5	4.5	9.0
Scarred and Negative	1171	53.0	8	0.68	14.3
Totals.....	2208	99.3	56	2.53	99.9

TABLE III  
Mortality of Appendicitis in St. Luke's Hospital  
1937 to 1940 Inclusive

Condition of Appendix	Number	Percentage of each	Deaths	Death Rate	Percentage of Deaths
Acute.....	334	25.2	2	0.6	11.1
Gangrenous.....	144	10.8	4	2.7	22.2
Perforated.....	37	2.7	6	16.2	33.3
Abscessed.....	19	1.4	3	15.7	16.6
Chronic.....	58	4.3	1	1.7	5.5
Scarred and Negative	737	55.5	2	0.27	11.1
Totals.....	1329	99.9	18	1.35	99.8

tions for other pelvic disease. From 1929 to 1936 inclusive, there were 469 incidental appendices among the chronic, scarred and negative appendices. From 1937 to 1940 there were 304 incidental appendices. None of the deaths that are listed in the tables followed the removal of an incidental appendix.

It can be seen in Table III that the death rates following appendectomy have been reduced in all classes except in the perforated group. A possible explanation of this increased death rate in the last four years seems to be that many patients were seen earlier, before definite abscess formation had occurred and the appendix was removed and classed with the perforated, instead of the abscess group, but these were not seen early enough to prevent the higher mortality rate. In Table III, five patients with perforated appendices were not operated upon, but the necropsy showed the perforation. In Table II, four similar cases were found. Another patient was not examined at operation or after death, but seemed very definitely to have died of appendicitis and the cause on the death certificate was reported as perforated appendix with peritonitis.

The death rate following appendectomy in St. Luke's Hospital has decreased from 2.53 in the 1929 to 1936 period, to 1.35 in the last four years. For all acute cases the rate has decreased from 4.63 in Table II, to 2.8 in Table III, which is a reduction of 39.5 per cent. In Table III, 11.1 per cent of the deaths followed the removal of a negative, scarred or recurring type of appendicitis. This is the same rate as for simple acute appendicitis. The chronic inflamed appendix was



responsible for 5.5 per cent of the deaths. These deaths are often not considered in statistics on the mortality rates of appendicitis, and are regarded as the result of the unavoidable complications which may occur in any operation, such as pneumonia, embolism, sepsis, etc.

The reduction of the death rate of appendicitis in the United States by about 28 per cent between 1930 and 1938 is due to many factors. The education of the public regarding the danger of the uses of laxatives in any abdominal disease, and the danger of delay in calling their physician in any illness, appear to be important factors. In Cedar Rapids this education has caused an apparent increase in the number of patients seeking early treatment, but does not seem to have reduced very much the number who have taken laxatives.

Improvement of surgical management in Cedar Rapids is perhaps the most important factor in the decreasing mortality rate of appendicitis. Among these improvements is the relief of gastric distress by the use of the Wangenstein tube. The patients are treated as individuals somewhat more than formerly; that is, not all patients receive the same treatment. Another important factor is better cooperation of the experienced surgeons with the general practitioner and occasional surgeon. A larger percentage of all appendectomies has been done or supervised by the experienced surgeons in the later years. The use of the sulfonamide drugs in a few cases has also been of some importance in recent cases.

#### CONCLUSIONS

The death rate for appendicitis has decreased about 28 per cent in the United States, between the years 1930 and 1938. In Cedar Rapids the death rate for appendicitis has decreased about 40 per cent in the past ten years. This decrease appears to be due to improvements in surgical management and the education of the public regarding early medical attention and the dangers of laxatives in abdominal disease. The reduction in the number of deaths from appendicitis is very encouraging and can be further improved if the public, as well as physicians, can be made to realize that any abdominal distress may be due to appendicitis.

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### THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

#### CERVICOFACIAL ACTINOMYCOSIS TREATED WITH SURGICAL MAGGOTS

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Dubuque

The case to be presented is unique because as far as we have been able to determine, it is the first time that surgical maggots have been used in the treatment of actinomycosis. Because we were impressed with the beneficial effects, but also recognize the fallacy of judging the effectiveness of any therapeutic agent by the results obtained in a single case, we are reporting this case in order to stimulate others to use the maggots in similar cases.

#### CASE REPORT

The patient, a white farmer, forty-six years of age, was admitted to the Finley Hospital October 4, 1940 because of "difficulty in swallowing and swelling of the neck".

*Family History:* Irrelevant.

*Past History:* Negative.

*Present Illness:* Three weeks before admission the patient developed some difficulty in swallowing, marked salivation and swelling of the neck. The swelling started on the right side, under the jaw, but gradually extended to the opposite side and at the time of admission involved the entire neck anteriorly. The swelling was most marked on the right side where there was considerable tenderness. The tongue also felt swollen. Two weeks before admission he was given sulfanilamide of unknown dosage but it seemed to be without benefit in controlling the swelling.

*Physical Examination:* The patient was a well developed male, weighing 225 pounds. His temperature was 100.3 degrees, the pulse 88 and the respirations 20 per minute. He was breathing with considerable difficulty. There was a livid, brawny swelling extending downward from either jaw to the level of the sternum. It was more marked on the right side and was estimated to be at least an inch thick over the trachea. On palpation the tissues were indurated and board-like and there were no areas of fluctuation. There was considerable tenderness below the right jaw in the region of the submaxillary gland. The mouth hygiene was bad and there was excessive salivation. The floor of the mouth and the

tongue were swollen and edematous and there was some edema of the epiglottis. The swelling was most marked on the right side where the tongue was forced upward. On pressure, tenderness was pronounced on this side. The tonsillar regions, the nasopharynx and retropharynx were not involved. The vocal cords moved freely and equally. There was swelling around the orifice of the right submaxillary duct but saliva was seen coming from it and no pus could be expressed. No calculus could be felt in either submaxillary duct. The teeth were in fair condition and there were no signs of an alveolar abscess. The general examination was negative.

*Provisional Diagnoses:* The following diagnoses seemed most likely; first, infection of the right submaxillary gland due to a calculus in the duct; second, extension of an infection due to organisms of Vincent's angina from the mouth to the submaxillary or sublingual glands; or third, actinomycosis.

*Course in the Hospital:* Smears from the mouth showed large numbers of the organisms of Vincent's angina and staphylococci. The blood examination showed a white blood count of 11,200 with 75 per cent polymorphonuclear leukocytes; red blood count, 4,200,000; and hemoglobin, 84 per cent. The urine showed a trace of albumin but no other evidence of nephritis. The x-ray examination of the right submaxillary region showed faint linear calcifications in the soft tissues but it was thought that they might be a partially calcified stone either in the gland or duct. Because of the lack of any area of fluctuation or of an abscess pointing in the floor of the mouth and since the patient was still able to swallow liquids and the breathing was only slightly affected, it was decided to postpone any search for pus. However, with a full realization of the possibility of introducing infection, it was felt necessary definitely to rule out a calculus by probing the right submaxillary duct. This was done but no stone could be felt. It was then decided to give sulfapyridine (seven grains every three hours) and also relatively large doses of x-ray therapy over the indurated area.

Three days after admission the blood examination showed a white blood count of 8,600; red blood count, 4,120,000; and hemoglobin, 55 per cent. The sulfapyridine was discontinued. In order to supplement the limited fluid intake, normal saline and glucose solutions were given intravenously. Three days later the blood examination showed white blood count, 10,200 with 76 per cent polymorphonuclear leukocytes; red blood count, 4,400,000; and hemoglobin 82 per

cent. The condition of the tissues of the neck and floor of the mouth were about the same as on admission and the patient was extremely apprehensive but in no particular pain. Believing that the infection might be due to the organisms of Vincent's angina, it was decided to give 0.6 of a gram of neosalvarsan. Two other injections of the drug were also given at weekly intervals but with no apparent effect on the lesion. During the first sixteen days in the hospital the temperature varied between 99 and 99.6 degrees. There were periods when the patient had increased difficulty in swallowing and breathing and the possibility of him requiring a tracheotomy was always in mind.

Seventeen days after admission there was a suggestion of fluctuation on the right side of the neck below the mandible, and this was considered the result of the x-ray therapy. The next day a small abscess pointed between the tongue and the jaw at the level of the last, lower right, molar tooth. This was incised and about ten drops of thick pus came away. A probe could be inserted along the mandible but no bare bone was felt. No sulfur granules were seen in the pus, and smears and cultures showed only staphylococci. Two days later there was distinct fluctuation on the right side of the neck and it was decided to operate.

*Operative Note:* Under avertin anesthesia a horizontal incision one and one-half inches long was made one inch below the lower edge of the right mandible using a cutting and coagulation knife. With gentle blunt and finger dissection the tissues were opened and a pocket of purulent material containing sulfur granules was released from the submaxillary gland. The abscess cavity extended from the right side over the trachea and somewhat to the left side. Great care was taken not to open up new areas and no curetting was done. A soft rubber tissue was used for drainage and the wound was left wide open. A few small pieces of tissue were removed for microscopic examination and revealed the ray fungi.

*Postoperative Course:* There was profuse drainage during the next few days; induration of the adjacent tissues subsided somewhat and the difficulty in breathing and swallowing decreased. Three days after operation the daily intravenous administration of 25 grams of sodium iodide was started. Because the drainage continued to be very profuse and very foul the use of maggots was considered desirable. Our opinion was influenced by the excellent results obtained by their use in another case in which a diffuse cellulitis of the side of the head and neck



seemed secondary to acute mastoiditis. (That patient was a diabetic individual sixty-five years of age, in poor physical condition. At operation a perforation of the mastoid cortex was found. Because of the patient's condition only a simple mastoidectomy was done and the induration of the soft tissues continued although the drainage was enormous in amount and very offensive. Because no further operation could be performed with safety, maggots were introduced at intervals for two weeks when the wound became clean and the cellulitis had practically disappeared. Shortly afterward a radical mastoidectomy was performed with complete recovery.)

The maggots were introduced into the wound of the patient one week after the operation and in four days the cavity was cleared of nearly all of the foul tissue; the drainage was markedly decreased and the odor disappeared. The patient was discharged twelve days after operation with a rubber tube in for drainage and with instructions to take 160 grains of potassium iodide daily in enteric-coated capsules. At home there was slight drainage for several weeks. In two months the wound was completely healed and there has been no recurrence since his discharge from the hospital one year ago.

*Comment:* The more interesting features of this case are first, the use of irradiation which apparently aided localization of the suppurative process; second, the value of avertin as the anesthetic because of the patient's excessive salivation, dirty mouth and difficulty in breathing and swallowing which prohibited the use of ether or gas anesthesia; and third, the use of maggots to remove the cellular debris which favors the growth of the *Actinomyces*. By cleansing the infected areas we believe the propagation of the fungus was retarded and healing promoted. Large doses of iodides were given on a purely empirical basis and their value is at least questionable. The same is true of sulfanilamide and sulfapyridine.

#### DISCUSSION

A review of the literature shows that in the past an extensive array of methods have been utilized in the treatment of actinomycosis. Their very number indicates that many of them were of doubtful value. In recent years the treatment has been simplified and in general more or less radical surgery sometimes employed alone, but more frequently combined with roentgenotherapy, and the administration of iodides, thymol or the sulfonamide drugs are the methods used.

The iodides have been used empirically because veterinarians have found them to be a specific in

the disease of hogs, caused by the *Actinobacillus* but this organism rarely infects man and as Wangensteen<sup>1</sup> has pointed out, the drug is of doubtful virtue in real bovine actinomycosis. The bovine *Actinomyces* is the organism which infects man in the vast majority of cases according to studies made at the University of Minnesota. Wangensteen's experience with thymol in treatment was not as favorable as had been reported by Joyce<sup>2</sup> and some other workers. He had not used the sulfonamide drugs but several favorable reports<sup>3, 4, 5 and 6</sup> have appeared since 1938. If verified these drugs should be a valuable adjunct to surgery but they had no apparent effect in our case. Wangensteen favors radical curettement and keeping the wound open by packing, and believes roentgenotherapy is of some value because it promotes fistulization and encourages drainage of the detritus in the diseased process.

Actinomycosis has acute and chronic phases. The disease causes central areas of necrosis, liquefaction and abscess formation surrounded by peripheral zones of granulations which attempt to localize the process. This results in multiple abscess cavities separated by fibrous partitions. The ray fungus which is anaerobic, finds a suitable medium for growth in these abscess-like pockets filled with dead or dying cells.

The problem of cleansing multiple, separate cavities connected by sinuses is a difficult one, yet it is necessary in order to render the environment unfavorable for the continued growth of the fungus. No one doubts that it can be done by radical surgery but from our experience in this case it seems that maggots may accomplish the same results quicker and with less trouble to the patient. Whether the maggots had a specific action on the *Actinomyces* or simply by cleansing the infected areas made conditions unsuitable for their existence, we do not know, but they did promote healing whereas the other forms of treatment seemed unavailing. The character of the lesions in actinomycosis makes their use logical but we realize that their true value can only be based upon results in a considerable number of cases.

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# STATE DEPARTMENT OF HEALTH

*Walter L. Biering*

## SPUTUM MIRRORS PNEUMONIA

Studies conducted during recent years by Frisch of Wayne University, Detroit, show the importance of sputum examination in revealing the type of pneumococcus and the value of such examination in the prognosis of the individual case of pneumonia.

### *Technic*

The procedure employed by Frisch is to make smears from rusty sputum, stain with Wright's stain and examine from day to day at twelve-hour intervals, until recovery or death of the patient. Special attention is given to the number of pneumococci found in the sputum specimen. Extracellular encapsulated organisms are counted in ten oil-immersion fields and the average taken per field. The patients are classified according to the number of pneumococci found, as follows: Group A, less than ten pneumococci; Group B, 11 to 30; Group C, 31 to 65 and Group D, over 65 microbes per field.

### *Findings*

In a study of 78 pneumonia cases, verified by x-ray examination, Frisch reported that in Group D cases, patients are usually moribund and not affected by treatment; the pneumonia is fulminating and marked by a high mortality rate.

### *Effects of Serum and Chemotherapy*

Frisch has found that when type specific serum is administered to patients whose sputum findings place them in Group A or B of the above mentioned classification, the first effect is that pneumococci in the sputum show definite agglutination in small or large clumps. A second effect is phagocytic, noted by an increase in the number of pneumococci with swollen capsule which appear in the cytoplasm of the leukocytes. Agglutination or clumping of pneumococci has also been observed in non-serum treated cases, probably indicating the spontaneous development of active immunity.

### *Sputum in Type III Pneumonia*

Frisch regards Type III pneumonia as a distinct entity. The mucoid character of the sputum

and exudate is apparently due to the formation of large amounts of capsular carbohydrate. The capsular substance appears as a network or in strands connecting adjoining pneumococci; "reticulation" is the term applied to the strands of capsular substance seen in stained sputum preparations and in the lung exudate.

### *References*

References as listed below are obtainable from the State Medical Library, State Historical Building, Des Moines. The articles by Frisch include photomicrographs showing capsulated pneumococci, phagocytosis, agglutination and reticulation. The articles also consider the rationale of chemotherapy and combined treatment.

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## UNDULANT FEVER OUTBREAK

On September 10, 1941, investigation was made in Marcus (population 1,206), Cherokee County, of thirteen cases of undulant fever. The cases, verified by positive agglutination findings at the Department's State Hygienic Laboratory, were reported by M. F. Joynt, M.D., Local Health Officer, to District Health Service No. 3, LeMars, and to the State Department of Health.

All of the patients gave the history of using dairy products from a producer who distributed raw milk. Delivery of milk from the dairy regarded as a source of infection was stopped September 10.

Agglutination tests for Bang's disease on dairy



cows led to the discovery of three reactors and one suspicious reactor. The porcine strain of organism, *Brucella suis*, was isolated from milk specimens taken from two reactors. Blood cultures from some of the undulant fever patients likewise yielded *Brucella suis*.

Due to the insidious nature of the disease and the long incubation period, new cases came to attention, verified by positive agglutination reactions, during September, October and the early part of November. In addition, twelve individuals were found to have positive agglutination reactions in diagnostic dilution, through a special survey among school children in public and parochial schools.

To date (November 17), 63 persons in Marcus have been found with positive reactions for brucellosis. Although some of the cases were of a mild type and some apparently of subclinical nature, others are having illness of moderate severity.

Skin tests with brucellergen, performed on a large group of school children, gave additional information regarding persons who were exposed to the common source of infection.

SEVENTH PNEUMOCOCCUS STUDY COURSE

The seventh pneumococcus study course, sponsored by the State Department of Health, was held at the State Hygienic Laboratory, November 18, 19 and 20, 1941. Twenty-five persons registered for attendance. The course was conducted by M. E. Barnes, M.D., Director, and I. H. Borts, M.D., Associate Director of the State Hygienic Laboratory. A complete list of those who attended will appear in the issue of the JOURNAL for January, 1942.

PNEUMONIA REPORT CARDS

A supply of cards for use in reporting of pneumococcus and other forms of pneumonia has been received through the Division of Sanitary Reports and Statistics of the United States Public Health Service. These cards have been forwarded in quantity to all pneumonia typing stations and to medical directors of District Health Services.

The accompanying illustrations, Figures 1 and 2, show the front and reverse side of the special pneumonia report card.

When a pneumonia case is reported from a typing station, the attending physician is not expected to fill out a separate report card. When diagnosis is based on clinical findings, without

laboratory examination of sputum, the attending physician is requested to report such case to the district health office or local board of health.

Fig. 1

Federal Security Agency  
U. S. Public Health Service

OFFICIAL BUSINESS

Reduce  
Pneumonia Mortality  
by  
Accurate  
Bacteriologic Diagnosis  
and  
Modern Therapy

COLLABORATING EPIDEMIOLOGIST,

U. S. Public Health Service,  
Care State Dept. of Health,  
DES MOINES, IOWA.

Penalty for Private Use to Avoid  
Payment of Postage, \$300

Fig. 2

....., 19....  
(City or town) (Date)

PNEUMONIA, indicate bacteriologic diagnosis as follows:  
Pneumococcus, type .....  
Friedlander's bacillus, type.....  
Streptococcus..... Staphylococcus..... Influenza bacillus.....  
Other .....  
Cause undetermined .....  
Patient's name..... Age.... Sex.... Occ....  
Patient's address..... Urban.... Rural....  
School attended or place of employment.....  
Number in household: Adults..... Children.....  
Attending physician..... M.D.,.....  
(Name) (Address)  
Name of typing station.....  
Name of laboratory worker.....  
Signature of local health official.....

PREVALENCE OF DISEASE

Disease				Most Cases
	Oct. '41	Sept. '41	Oct. '40	Reported From
Diphtheria .....	13	3	27	For the State
Scarlet Fever .....	177	69	199	For the State
Typhoid Fever .....	15	14	10	For the State
Smallpox .....	1	1	2	Pocahontas
Measles .....	74	28	142	Boone, Story
Whooping Cough ..	98	95	78	Dubuque, Lee, Woodbury
Brucellosis .....	52	43	30	Cherokee
Chickenpox .....	100	25	147	Black Hawk, Clarke, Des Moines, Dubu- que, Woodbury
German Measles ...	2	8	2	Plymouth, Pottawattamie
Influenza .....	13	6	8	Boone, CCC Camp, Clarke
Mumps .....	84	75	102	Mahaska, Marshall
Pneumonia .....	72	40	83	For the State
Poliomyelitis .....	9	4	242	Buchanan, Dubuque, Hamilton, Jasper, Polk, Pottawattamie, Union
Tuberculosis .....	56	48	192	For the State
Gonorrhea .....	201	113	183	For the State
Syphilis .....	252	152	270	For the State

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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DENNIS H. KELLY, Associate Editor.....Des Moines

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## RHEUMATIC HEART DISEASE

One of the greatest unsolved problems in medicine is rheumatic fever. It is estimated that there are some 800,000 to 1,000,000 cases of rheumatic heart disease in this country with a mortality rate of about 40,000 deaths a year. The average age at death is thirty years. While infantile paralysis has been publicized throughout the length and breadth of the land as a dreaded cause of crippling, it is far less damaging (one-seventh) in its crippling effects than is rheumatic heart disease. It is gratifying to note that crippling from rheumatic heart disease has been recognized in the administration of a program of services for crippled children under the Federal Social Security Act, and that the Children's Bureau is already embarked upon a program of assisting states to develop services for children with rheumatic infections and rheumatic heart disease.

In the November 15, 1941, issue of the *Journal of the American Medical Association*, Dr. Alexander Martin reports upon twenty years' observation of 1,438 children with rheumatic heart disease. Thirty per cent of them are dead after this twenty-year study. Nearly half of the deaths occurred within five years of the initial rheumatic infection, and the average age of the initial rheumatic infection was between six and eight years. Approximately 58 per cent of the deaths occurred in the patients with repeated reactivations of the disease and in those where the heart damage was severe. Eighty per cent of the deaths resulted from the rheumatic infection itself, and less than one per cent from congestive heart failure. Deaths from the latter cause occurred in the older age group, the oldest patient being thirty-four. The patients who did the best were those in whom only

one rheumatic episode occurred and in whom the cardiac damage was slight.

From this very much abbreviated summary of Dr. Martin's statistics, several significant conclusions may be drawn. In the first place it is extremely important that rheumatic fever be recognized in its earliest stages. That this is no easy task is dwelt upon at some length by the author. In 212 of the children there was no known cause to explain the rheumatic carditis, in contrast to 899 who had rheumatic polyarthritis, 109 who had chorea alone, and 171 who had chorea and polyarthritis combined. Many of the group of 212 gave a history of "growing pains" only, and significantly, 55 of this group are now dead. The difficulty comes in attempting to determine whether the "growing pains" are on a rheumatic basis or on some other basis of no special seriousness. Dr. Martin gives Erdheim credit for offering the most satisfactory explanation for so-called growth pains of a non-rheumatic nature. Erdheim states that in certain rapidly growing children, minute fractures of the metaphyseal plate occur, and that he has been able to demonstrate these minute fractures at the growing ends of the long bones in children who have died of acute illness or by accident. However, the recognition of "growing pains" of a rheumatic nature may require a most detailed study. Fatigue, loss of appetite, loss of weight, anemia and frequent nose bleeds are symptoms which suggest a rheumatic infection. Such children should have sedimentation rate determinations, electrocardiograms, white blood counts, Addis counts on the urine, the Weltmann serocoagulation reaction and the fibrin-olysin test, in order that a differential diagnosis may be made.

Once the diagnosis of rheumatic fever has been established the problem arises of adequate care during the acute stage and the prevention of reactivations until after puberty has been reached. No substitute for prolonged rest in bed during the acute stage of the disease has been developed. Sulfanilamide is apparently contraindicated in acute rheumatic fever, but there is a possibility that it may be of value in preventing reactivations. Most important of all in the prevention of relapses is the prevention of respiratory infection, particularly hemolytic streptococci. Residence in well-managed convalescent homes after the acute stage has subsided is highly desirable as is transportation to warm climates during the winter months. Lowering the bacterial counts of the air in institutions harboring rheumatic children has been reported as offering some evidences of success. If the child can be brought to the age of puberty with a minimum of cardiac damage, his



chances of undergoing further relapses seem to be greatly decreased.

These are but a few of the major considerations of rheumatic infection suggested by Dr. Martin's article. It is our opinion that such articles are worth noting, lest we as physicians, like the laity, be tempted to let the "crippled limb" overshadow the more serious "crippled heart."

#### THE MEDICAL PROFESSION AND NATIONAL DEFENSE

As the nation girds itself to meet the emergency which confronts it, the rôle which the physicians of the country assume is a most important one. It is a gigantic task which will require the co-operative effort of all the doctors in the land.

At this time our army is short 1,500 physicians. This deficit in medical personnel must be filled by the young doctors just completing their medical training, and by the voluntary enlistment of practitioners who are qualified by age and experience to serve in this capacity. It has been made clear by the War Department that the need is for young men—young men who are physically able to adapt themselves to tactical medicine, "blitzkrieg" tactics, the establishment of the casualty clearing station and prompt evacuation of casualties to other stations in the rear. The change in army medicine since the last world war is just as marked as is the change in the combat forces. The doctors in this country are already qualified by their training to do the work in the base hospital, but the army is training men now for the new rôle which modern warfare demands.

That the War Department appreciates the need of doctors is demonstrated by the deferment of medical students and internes. General Hershey has specifically stated that papers acknowledging matriculation in a medical school will automatically occasion deferment by the draft board. The third year medical student is expected to enlist in the Medical Administrative Corps, but will be permitted to finish his studies and internship, when he will become a Medical Reserve Officer, and be called for active duty.

In addition to a deficit of 1,500 physicians in the army, the Veterans Bureau needs 300 more doctors, the United States Public Health Service requires more qualified men, and the expansion of defense industry demands more doctors qualified in industrial medicine. The concentration of employees in industrial areas requires more concentration of physicians in those areas to meet civilian needs. Many rural areas are deprived of medical care because the rural doctor has been called for army duty.

In order to meet the military demands, a Committee on Procurement and Assignment has been set up in Washington, and this committee will procure and assign physicians to meet specific needs. This committee working in cooperation with the American Medical Association and its subsidiaries, the state and county medical societies, intends to procure physicians for the various branches of service without a dislocation of civilian medical requirements.

It is obvious that the War Department and the administration in Washington are turning to the physicians of America for their help and co-operation. The physicians of America will not be found wanting. One cannot help but introduce the hope that "When the hurly burly is o'er, and the battle's lost or won," those seeking our backing now will not, in the creation of a new social order, inflict on the profession of medicine regimentation which will remove the impetus of individual initiative and personal relationship with the patient which have made American Medicine what it is today.

#### STATISTICAL STUDY OF PNEUMONIA DEATHS

An illuminating and interesting article on "Some Current Results in Pneumonia Treatment" appears in the October issue of the Statistical Bulletin of the Metropolitan Life Insurance Company. The study was made among physicians certifying deaths from pneumonia for policyholders of the Company. Information sought included the time which had elapsed between the onset of illness and the summoning of medical aid, and the essential details of diagnosis, bacteriology, therapy and complications in each case. Data were received on 2,334 deaths.

It has long been known that pneumonia reaps its greatest harvest in the very young and the aged. The reasons for this are obvious and need not be considered here. The important point is that with the new methods of therapy this characteristic is now more sharply demonstrated than ever before. Only 17 per cent of the deaths from primary pneumonia occurred in the age group from five to forty-five. Seventy per cent occurred in the group over forty-five years of age, and 37 per cent of these were sixty-five or more. About one-eighth of the total deaths occurred in children under five years of age.

Over and over again the importance of calling the physician at the very onset of pneumonia symptoms has been emphasized. In more than 40 per cent of the group of deaths studied a doctor had not been called until the fourth day or later,

and in 12 per cent not until the eighth day or later. This was found to apply particularly in the cases of older persons. Thus in over half of the fatal cases in this series it may be concluded that the delay in institution of specific therapy was probably a factor in the outcome.

Again in the past a great deal has been said about the importance of determining the specific organism responsible for the pneumonia. This is deemed to be particularly essential in order that information may be secured as to which types of pneumococci may be expected to produce the most serious type of infection. However, in this series, in approximately two-thirds of the primary lobar pneumonia and four-fifths of the bronchopneumonia cases, no attempt was made to determine the organism involved, and even in one-fourth of the cases reported to be pneumococcal pneumonia apparently no attempt was made to type the pneumococcus. The conclusion to be drawn from these results would seem to be that in actual practice physicians today are largely placing their reliance on chemotherapy.

This was further borne out by information obtained in the study of the policyholders dying from lobar pneumonia; 84.3 per cent had received chemotherapy; less than one per cent had been treated with serum only; 72.8 per cent were treated with chemotherapy only and only 11.5 per cent with combined chemotherapy and serum. It is interesting to note that sulfathiazole was the drug most commonly used. The ratio between sulfathiazole and sulfapyridine was approximately two to one. Only four cases in the entire group were treated with sulfadiazine, the new sulfa compound which experimentally has been found to be very successful in the treatment of pneumonia. Another interesting fact was that in 11 per cent of the deaths chargeable to lobar pneumonia, drug administration was discontinued because the patient showed full clinical recovery only to succumb later to a relapse or to complications.

This important study on what is actually being done in practice clearly demonstrates the importance of maintaining the educational programs which have already been so widely instituted in the last few years. If the mortality rate from pneumonia is to be brought down to its lowest possibilities, people must be taught to call a physician at the very onset of symptoms so that treatment may be begun at a time when it has a chance of being effective. Furthermore, educational campaigns must go on among physicians to the point where all the effective therapeutic measures in the treatment of pneumonia are utilized to their fullest extent. Every case of pneumonia should be typed. Those for which a typed serum

is available should receive serum in combination with chemotherapy. Above all, treatment with chemotherapy should be continued sufficiently long that the risks of relapses and complications are reduced to a minimum.

This study shows that the management of pneumonia is still not being conducted as effectively as it should be.

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#### DEFERMENT OF MEDICAL STUDENTS AND INTERNES\*

One of the questions which provoked the most discussion at the recent conference of secretaries and editors in Chicago was that of deferment of medical students and internes. The representatives of the Selective Service system have been most sympathetic with the wish of the medical profession that deferment be granted to these two groups, and recently met with representatives of the Army, the Navy, the Public Health Service, the Health and Medical Committee, the Committee on Medical Preparedness, the Association of American Medical Colleges and other agencies to work out some solution for the problem. As a result of that meeting, it was decided to create a pool of medical officers for the War Department to call upon as necessary in carrying out the five-year program contemplated by the Selective Service Act.

Briefly, the mechanics of the plan are as follows: Draft boards have been instructed to defer first and second year medical students upon the recommendation of the dean of the medical school that they are making satisfactory progress in their studies. Deferment is not automatic, and does not apply to students who are considered incapable of doing the medical work satisfactorily. At the end of two years, the medical student is invited to apply for a commission as second lieutenant in the Medical Administrative Corps of the Army or as ensign in the Navy. When he receives his commission, he may be sure that he will be allowed to finish his medical course. Upon graduation he becomes a member of the Medical Reserve Corps, and will be deferred for his year's internship, after which he will be eligible for service. This plan provides that the medical student may complete his training and when he enters the Army or Navy, he may serve as an officer rather than a private.

The medical profession is very anxious that medical students should be allowed to complete their training, but it has never wished to evade the responsibilities which national defense imposes upon all people of the country. The same

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\*From the Committee on Medical Preparedness.



feeling is true for medical students. The great majority of them wish to do their part in the emergency, but they are sincere in thinking they may be of more service if they are allowed to complete their training before being inducted. Only a small percentage would be selfish enough to wish to benefit themselves at the expense of other physicians who are serving in the armed forces by expecting or asking complete exemption from service. In most instances it will be found that the medical student's reluctance to join the Medical Administrative Corps is due to a lack of understanding or appreciation of its purpose.

The College of Medicine of the State University of Iowa is fortunate in two respects: first, because it has been a part of the R. O. T. C. for many years and a large proportion of its students are already medical reserve officers; and second, because the dean possesses a clear and sympathetic understanding of the problem and has explained it to his students. Iowa will rank among the top in the percentage of medical students enrolled in the M. A. C., and the profession in the state may well be proud not only of the students, but also of the dean who has professed his complete confidence in their intention to do their part in the national emergency. Looking forward to a future when the practice of medicine will once again be concerned primarily with care of the civilian population, it seems altogether probable that the high standards of medical conduct engendered at this time will carry over to the benefit of the people and the greater advance of medicine.

#### NEW PLANS FOR PHYSICAL EXAMINATIONS OF DRAFTEES\*

National headquarters of the Selective Service system has announced that a new plan for physical examination of all draftees will be placed in effect in the near future, depending upon when the Army will be able to provide the necessary physicians. This plan has been tried in several eastern states with successful results, and the Selective Service system is endeavoring to make it national in scope as soon as possible.

Selective service officials are very appreciative of the work which has been done by draft board physicians the country over. They realize that the induction of the men comprising our new army has meant a tremendous output of energy on the part of the physicians, without recompense to them. They state in all sincerity that the draft board physicians have performed an excellent piece of work in selecting men who are physically fit. However, since the

Army has the final authority of acceptance or rejection, the preliminary examination has been followed by another examination by its own doctors, the second being almost a duplicate of the first. The War Department has been led to see that this duplication of examination is a waste of energy at a time when every ounce of energy should be utilized efficiently. Already there is a shortage of physicians, and those who are accepting the burden of caring for the civilian population have also shouldered the additional work entailed by conscription.

In an effort to ease the burden on the local physicians, the Army is planning to conduct a single examination of all draftees by its own physicians. Each state is to be divided into districts, and Army physicians will conduct examinations in each district at certain intervals, depending on its population. Draft board physicians will be asked to "screen out" the men obviously unfit for military service, but on the whole they will be relieved of the burden of making a complete examination. Work which has taken half a day or more in the past should require less than thirty minutes under the new arrangement. This should be welcome news to physicians who have served so loyally without compensation during the past year, many of them at a real sacrifice, and it should also be beneficial to the draftee. He will know at once whether he has been accepted or rejected, and he will be allowed more time to arrange his affairs before reporting for service.

Selective Service officials in Iowa do not know how soon the new plan will go into effect in this state. Until all details have been worked out, draft board physicians will continue as they have during the last year, although it is understood that the load will be lighter until after the first of the year, because the Army does not plan to induct many men during the holiday season.

#### MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

##### Meeting of the Committee on Child Health and Protection

Sunday, November 9, 1941

The Committee on Child Health and Protection of the Iowa State Medical Society met in the central office Sunday morning, November 9, with the following doctors present: R. H. McBride of Sioux City, C. P. Phillips of Muscatine, Lee F. Hill of Des Moines, and J. M. Hayek of the State Department of Health, Des Moines.

Since only three of the seven committee members were in attendance, no official business could be transacted. Those present recommended that the name of the committee be changed to the Committee on Maternal and Child Health; that prenatal clinics be established in counties which want and need them; and that well-baby centers be conducted where they do not exist. Meeting adjourned at one-fifteen.

\*From the Committee on Medical Preparedness.

# Winning the Battle, Once and For All\*

HENRY E. SIGERIST, M.D.

## CHRISTMAS SEALS



*Protect  
Your Home from  
Tuberculosis*

Why should we still have tuberculosis with us? Why should we have every year 60,000 people, mostly men and women in the prime of life, bread-winners and young mothers, taken away from their families? Why should half a million of our fellow citizens still suffer from tuberculosis? Other diseases have been overcome entirely or have lost their significance — plague, cholera, yellow fever, typhus, smallpox

and many others which used to be a curse to the country. The history of the last thirty years proves that tuberculosis can likewise be conquered.

Thirty years ago the death rate from tuberculosis was 70 per cent higher than today. A reduction by 70 per cent in such a short period of time seems incredible, yet it is true. We have just lived through ten difficult years and yet, during those ten hard years the death rate from tuberculosis declined by almost 40 per cent. One generation ago the disease was the leading cause of death, while today it ranks seventh. The progress achieved since 1904, through the combined efforts of public health agencies, the medical profession and the public, under the leadership of the National Tuberculosis Association, has been most encouraging indeed. In 1939 four of our states had a death rate of less than 20 per 100,000 of population and eight more states had rates of less than 30. Remarkable progress has also been achieved in many of our large cities.

The United States with its vast expanses, its heterogeneous population, its variety of occupations and social conditions has today among its white population the lowest tuberculosis death rate recorded for any country in the world. This was made possible because the leadership was intelligent and because the population followed the lead and cooperated. Yet we should not be deceived. The job is not finished. The enemy is still in our midst. It is encouraging to be able to register progress, but in public health we must always remember the failures and the unsolved problems. We must not compare our figures with those of economically backward countries. We can and must do better than the most advanced foreign nations. Our white population has a particularly low death rate. The picture of our colored fellow citizens, ten per cent of our people, is different.

Their tuberculosis death rate in 1939 was 130 per 100,000, or three and one-half times the rate of white people. The colored people have more tuberculosis not because they are colored but because they are poor. Tuberculosis today has to a large extent become a disease of the low-income groups, of the unskilled workers, whether colored or white, of all those people who are not adequately fed, housed and clothed.

Experience has shown that in its early stages tuberculosis can be cured more thoroughly than later. It also costs much less to cure an early than an advanced case. More than this, if a patient is found and treated early, he has no chance of spreading the disease. Our efforts, therefore, must be to find the early cases. The situation today is far from satisfactory. Fifty-five per cent of all tuberculous patients entering sanatoria are far advanced on admission, 32 per cent are moderately advanced and only 13 per cent are in the early stages. The goal must be to reverse this proportion, to find the incipient cases, and to treat them without delay. This, however, requires that the states have sufficient beds available for such patients in hospitals and sanatoria. Again, statistics speak an eloquent language. In states that have two or more beds available per tuberculosis death, the average death rate in 1938 was 39.8. In states with one to two beds, the rate was 44.7, and in states with fewer beds than annual deaths, the rate was 61.1.

If we wish to eradicate tuberculosis, to relegate it once and for all to the annals of medical history, we must finish the job that was started so auspiciously in the beginning of our century. It can be done, and experts have estimated that tuberculosis can be made a minor cause of death in a very near future, and practically wiped out in two generations, if the American people continue to contribute funds and facilities needed.

The National Tuberculosis Association and its state and local branches have been brilliant leaders, and they will not relax in their efforts until the battle is won, once and for all. It is up to us to support them to the utmost. In contributing to the much-needed funds of the Christmas Seal Campaign, we protect our own families, we contribute to the welfare of the country, and we help in preparing one of man's greatest victories over disease.

## CHRISTMAS SEALS



*Protect  
Your Home from  
Tuberculosis*

\*From the National Tuberculosis Association.



# SPEAKERS BUREAU ACTIVITIES

## SPRING COURSES

County medical societies desiring a postgraduate medical education program next spring should transmit their wishes to the central office as soon as possible in order to allow sufficient time for the necessary arrangements and permit the series of lectures to begin early in the year. Any suggestions for subjects or speakers will be gratefully received at any time. Such information assists the Bureau materially in arranging the type of course most desired by that particular group. Also, the Bureau will be pleased to submit a tentative program for the consideration of any interested society. The outline may then be approved or altered in any way to fulfill the members' wishes.

A few schedules are already being prepared for spring courses, and it is hoped that during the next year postgraduate medical education programs can be presented in several locations throughout the state so that any physician in Iowa may have an opportunity to obtain up-to-date information on medical subjects of current importance without having to travel too great a distance.

Future issues of the JOURNAL will carry the outlines for the various courses. Choose that center which is nearest to you and attend the entire series of lectures.

## PNEUMONIA FILM AVAILABLE

Dr. F. E. Schmidt of Chicago will be in Iowa the week of January 12 to 16, 1942, and will be pleased to show an excellent new film dealing with the diagnosis and treatment of pneumonia to any of the county medical societies in the state. Those societies interested in seeing this motion picture and hearing it discussed by Dr. Schmidt should communicate with the State Department of Health or the Speakers Bureau of the Iowa State Medical Society.

## RADIO SCHEDULE

WOI—Wednesdays at 2:05 p. m.

WSUI—Fridays at 9:15 a. m.

- Dec. 3-5 The Health Value of Military Training  
Earl B. Bush, M.D.
- Dec. 10-12 Tuberculosis  
John Russell, M.D.
- Dec. 17-19 Tonsillitis  
Walter Kirch, M.D.
- Dec. 24-26 Group Hospitalization  
F. P. G. Lattner
- Dec. 31-Jan. 2 That is Syphilis  
R. M. Sorensen, M.D.

## POSTGRADUATE MEDICAL LECTURES FOR THE MONTH OF DECEMBER

Ottumwa Hotel Ottumwa 6:30 p. m.	December 2	Urology in General Practice Gilbert J. Thomas, M.D., Minneapolis
Marshalltown Hotel Tallcorn 6:00 p. m.	December 2	Neurosis and Organic Disease Walter C. Alvarez, M.D., Rochester
Jefferson Greene County Hospital 6:30 p. m.	December 4	Low Back Pain Lewis M. Overton, M.D., Des Moines
Ames Sheldon-Munn Hotel 6:30 p. m.	December 11	Common Diseases of Childhood C. Anderson Aldrich, M.D., Chicago
Ottumwa Hotel Ottumwa 6:30 p. m.	December 16	Blood Disease Encountered in General Practice Charles R. Watkins, M.D., Rochester

## SCIENTIFIC RECORDINGS SCHEDULED FOR THE MONTH OF DECEMBER

Cedar Falls Sartori Hospital 6:30 p. m.	December 2	Head Infections in Relation to General Practice George E. Shambaugh, Jr., M.D., Chicago
Knoxville 6:30 p. m.	December 11	Diseases of the Gallbladder R. Russell Best, M.D., Omaha

## WOMAN'S AUXILIARY NEWS

MRS. H. I. MCPHERRIN, *Chairman of Press and Publicity Committee*  
5822 North Waterbury Road, Des Moines

*President*—MRS. W. R. HORNADAY, Des Moines

*President Elect*—MRS. F. W. MULSOW, Cedar Rapids

*Secretary*—MRS. M. J. MOES, Dubuque

*Treasurer*—MRS. A. E. MERKEL, Des Moines

### REPORT OF THE MEETING OF THE BOARD OF DIRECTORS OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

The mid-year meeting of the Board of Directors of the Woman's Auxiliary to the American Medical Association was held November 14, 1941, at the Palmer House in Chicago. Twenty-six officers, directors, committee chairmen, seventeen state presidents, several past presidents and a few presidents-elect answered roll call. Mrs. F. W. Mulsow, Iowa's president elect also represented her Auxiliary.

Mrs. R. E. Mosiman, president, gave an interesting report of her plans for the year, her visits in various states and the organization of a new auxiliary in Montana. Mrs. Charles Werner, circulation chairman for the Bulletin, reported 995 subscriptions to date. Eleven states ordered the post-convention issue in dozen lots to be used in planning their year's work. This magazine is of vital importance to every group for it keeps them in contact with the national organization.

Mrs. George Ewell of Madison, Wisconsin, Editor of the Bulletin, told us of its growth and the possibility that it could be a self-supporting magazine if the subscription list was sufficiently increased. The Board also voted to discontinue all free copies to officers and chairmen to increase our revenue.

Mrs. George Dillinger, Hygeia chairman, stressed its importance as a source of authentic health information. The subject of nutrition is of national interest; however, it has been made the basis of a large amount of propaganda from many sources. Hygeia is "the finest instrument available for combating the theories and schemes of cultists, faddists and quacks who would exploit the laymen in health matters." This magazine should be placed in schools, public libraries, rest rooms, beauty parlors, barber shops and institutions of all kinds.

Dr. W. W. Bauer, Director of Health Education and Associate Editor of Hygeia, spoke to us about health programs and how to arrange them. He also mentioned the recent survey of Woman's Health Interests. To date it is not a survey of all women inasmuch as certain groups are not adequately rep-

resented. More detailed tabulations are being made and will be published in subsequent issues of the Bulletin.

Mrs. William Hibbits, chairman of the program committee, urged auxiliaries to organize and promote courses on nutrition. In many cases, as in Iowa, auxiliaries are cooperating with state and county nutrition committees.

The state reports were both interesting and helpful. One state is taking a survey of its women to be used in their preparedness program. It is also securing donors for blood banks. Another state is stressing public relations. A tea was held in one of their large cities and presidents of all organized groups were invited. It was well attended and many worthwhile contacts were made. Other projects were educational funds for both doctors and nurses; benevolent funds for aged doctors; compiling of histories of doctors; Red Cross activities; first aid courses and many others. It was very evident that every state was giving its support, both moral and financial, to the projects most necessary to defense.

The Legislative Chairman, Mrs. Jesse D. Hamer, asked us to make a special study of the proposed legislative program. This study was published in the post-convention number of the Bulletin and additional copies may be secured from your state chairman.

At the luncheon we were privileged to hear Dr. Charles Dukes, vice president of the American Medical Association, and Dr. Arthur W. Booth, Chairman of our Advisory Council.

The enthusiasm with which every woman has undertaken her job was very noticeable at this meeting. The realization that there were forces working against the best interests of scientific medicine as well as against our government makes all members doubly anxious to be of service.

Mrs. W. R. Hornaday, President

### NATIONAL AUXILIARY PRESIDENT IN DES MOINES

About fifty women, wives of members of the Iowa State Medical Society, met for luncheon November



17 at the Hotel Fort Des Moines, honoring the national president of the Woman's Auxiliary to the American Medical Association, Mrs. R. E. Mosiman, of Seattle, Washington. Mrs. Mosiman stopped in Des Moines on her way home from the national board meeting in Chicago.

Mrs. W. R. Hornaday of Des Moines, president of the Iowa State Medical Society Auxiliary, presided at the meeting following the luncheon. She introduced past state presidents and members of the state executive board who were in attendance. Mrs. Mosiman was then presented and gave an interesting and timely talk regarding auxiliary work. She discussed the trends of women's organizations since their beginnings in America. The trends of pioneer groups concerned the problems arising from immigration, the second phase of women's activities concerned itself with abolition, then came suffrage, then temperance, and in this century, women's organizations are concerned with social problems such as housing, unemployment, recreation and health. Trends in health need the proper direction, and unless doctors' wives take an interest and assume leadership in the promotion of scientific medicine, health trends will go the way of the lay thinker. She stressed the importance of Hygeia and its value in the proper health education of the public. The House of Delegates of the American Medical Association entrusted to the Woman's Auxiliary the promotion of Hygeia. We should do more to secure its circulation among the laity.

There will be an aftermath to this present crisis, and community trends in health matters will need the wise leadership of the medical profession. Auxiliary members must be qualified to assist in all such projects.

Mrs. H. I. McPherrin, Chairman  
Press and Publicity Committee

### HEALTH-O-GRAMS

Are you aware that one of our most serious national health problems is the unseen waste of vitamins and minerals? Do not subject the vegetables to the necessity of swimming while they cook, unless it is soup you are making.

It is estimated that twelve out of every sixty pounds of potatoes are lost through peeling. Patriots these days will cook potatoes with their jackets on. More healthful, too!

Cabbage and related leafy vegetables are, according to Dr. McCollum, complete foods, while none of the "storage organs"—roots, seeds, stalks or tubers—has such a distinction. Mothers, keep the salad bowl filled with greens, but vary the dressing and also the greens. A very satisfactory source of Vitamin C and minerals, too!

Let you overlook the many greens which will add variety to winter meals, consider the following: celery cabbage (try the heavy stalks steamed and but-

tered); red cabbage (good cooked with apples and seasoned with pork); kohlrabi (the young leaves make excellent greens); Brussels sprouts (dressed with cheese sauce they are very tasty); Savoy cabbage (very mild flavored); collards (they are rich in calcium and Vitamins A and B). Collards were the first foods that Goldberger used in the prevention and cure of pellagra.

Recent research by Dr. Julia Outhouse serves to emphasize the importance of milk in the adult diet as well as that of the child since none of us eats enough non-milk foods to provide for calcium equilibrium. The calcium of milk is more readily utilized than that from any other source. Set a pitcher of milk on the table; it is cheap health insurance.

Mrs. A. G. Felter, Chairman  
Program Committee

### SMALLPOX IN IOWA

At the May, 1939, meeting of the Iowa State Medical Society, the House of Delegates passed a resolution to sponsor an immunization campaign against the scourge of smallpox. This action was initiated by the Committee on Child Health and Protection because of its concern over the great number of smallpox cases in Iowa, as compared to the number in certain other states. During the years from 1931 to 1940 there were 9,189 reported cases in Iowa, while during the same period there were only 1,780 cases in New York and its five adjacent states with a population thirteen times as large as ours.

Last year Iowa rated second in the prevalence of smallpox among the states of the union. Immunization week, November 3 to 10, has just passed. To what extent did your county participate? The doctors need your help in putting before the people the knowledge about smallpox and the preventive vaccination against it.

Mrs. Daniel J. Glomset, Chairman  
Public Relations Committee

### STUDIES RELATING TO MEDICAL LEGISLATION

As chairman of the Legislative Committee for our State Auxiliary I wish to bring to you the words of our National Chairman, Mrs. Jesse D. Hamer, who said: "As members of the Woman's Auxiliary to the American Medical Association we are aware of the challenge to the freedom of medical practice. If we desire to help protect the vital interests of American medicine, which has developed the most effective and widely distributed medical service in the world, we must become actively interested in the political affairs of our government, the structure of its party systems and those who control their various policies."

With that in mind let us of the Iowa Auxiliary

familiarize ourselves with legislation of medical interest, and be guided by the advisory committee of the American Medical Association along legislative lines. The question arises, "How can we as individuals or as members of an organization participate politically for good government?"

First: Study to understand the practical workings of our government, and avail ourselves of all political influences.

Second: Inspect and scrutinize closely all candidates for public office, particularly legislative offices, both state and federal.

Third: Remember that the character and type of our law-making officials can render either good or bad laws.

Since the American Medical Association, the state medical societies, and even our county organizations are working and have worked very hard on the various problems of legislative medicine and different lay groups are focusing their attention on problems of health let us as women of the Iowa State Medical Auxiliary go on record as acquainting ourselves with the laws that govern these things, and become more intelligent citizens, not only relative to things in general, but particularly along medical lines.

Mrs. Edward J. Harnagel

#### Madison County

The Woman's Auxiliary to the Madison County Medical Society met Monday, October 27, at the Uptown Cafe in Winterset for a six-thirty dinner and program. Mr. Robert C. Hanlon, of Des Moines, public health engineer from the State Department of Health, was the speaker of the evening. His subject was Sanitation.

Mrs. C. B. Hickenlooper, Secretary

#### BOOK NOTES

*The Psychology of Dealing with People* by Wendell White, Ph.D., is a book none can afford to miss. Originally published in 1936, the 1941 edition has been completely revised and reset and is intended to "serve the need of a feeling of personal worth." The author, a prominent psychologist of the University of Minnesota for the past fifteen years, and lecturer in applied psychology, does not promise the reader an endless array of new thoughts, but he does organize the fundamentals so well that it is more than worthwhile to review them.

This volume is not the "how to win friends" type; neither is it overstuffed with anecdote in the Aesop and Carnegie fashion (with due respect to both), but it is written to show, as Pestalozzi suggests: "What man is, what his needs are, what elevates and what degrades him, what invigorates, and what weakens him."

Doctors' wives need not hesitate to recommend this book to laymen because it is intended for all those interested in their fellowmen and is non-technical. It is divided into the following four sections:

1. Dealing with people in life situations in general.
2. Preventing wrongdoing.
3. Preventing mental abnormality.
4. Furthering mental health.

It is only good psychology to spare others the blunt approach when you want them to do something for their own sakes or for yours. By being subtle and indirect, giving praise where it is due, and showing confidence in the other fellow, you will achieve your ends much quicker than by being superior or bossy. No one is quite so loathsome as the over-positive individual. Agree in all sincerity with the man who is right and you will have a friend forever. Wrongdoing is usually the effort of an individual to attain a feeling of personal worth because his positive approaches have been frustrated. The most common manifestations are: criticism, snobishness, reforming others, converting others, fighting, lawbreaking, etc. The sensible thing, of course, is to attempt to provide an acceptable means for the afflicted individual to achieve his feeling of personal worth. Dr. White points out that "sports in schools have done more to decrease fighting than any other factor."

The section on mental abnormality is particularly revealing because most of us are interested in the oddities of character which are innumerable and which we would like to escape ourselves. "Mental health is secured largely by doing for others rather than exploiting them." It is well to remember that superiority, dominance and intolerance are losing aces, for "he governs longest who does not govern always"; and finally, "Anyone appreciative of the things he possesses is not prone to envy."

Mrs. Keith M. Chapler

#### SPEAKERS BUREAU

#### RADIO SCHEDULE

WOI—Wednesdays at 2:05 p. m.

WSUI—Fridays at 9:15 a. m.

- |                |                                       |                      |
|----------------|---------------------------------------|----------------------|
| Dec. 3- 5      | The Health Value of Military Training | Earl B. Bush, M.D.   |
| Dec. 10-12     | Tuberculosis                          | John Russell, M.D.   |
| Dec. 17-19     | Tonsillitis                           | Walter Kirch, M.D.   |
| Dec. 24-26     | Group Hospitalization                 | F. P. G. Lattner     |
| Dec. 31-Jan. 2 | That is Syphilis                      | R. M. Sorensen, M.D. |



## SOCIETY PROCEEDINGS

### Black Hawk County

Theodore K. Lawless, M.D., of Northwestern University Medical School, Chicago, was the guest speaker for the Black Hawk County Medical Society Tuesday, November 18. He spoke on Some of the More Common Skin Diseases, and illustrated his lecture with kodachrome pictures.

C. D. Ellyson, M.D., Secretary

### Bremer County

The combined monthly meeting of the Bremer County Medical Society and staff of St. Joseph's Mercy Hospital was held at the Fortner Hotel in Waverly, Monday, October 27. The scientific program consisted of the showing of the new Lederle film on Pneumonia.

O. S. Blum, M.D., Secretary

### Cerro Gordo County

The regular meeting of the Cerro Gordo County Medical Society was held Tuesday, November 11, at the Hotel Hanford in Mason City, with Philip F. Voigt, M.D., of Milwaukee, Wisconsin, as guest speaker. Dr. Voigt discussed Therapeutic Uses of Human Serum.

C. O. Adams, M.D., Secretary

### Dallas-Guthrie Society

Dr. Charles A. Nicoll of Panora, was selected to head the Dallas-Guthrie Medical Society for next year at the annual meeting of the organization held in Panora, Thursday, October 23. Other officers are: Dr. Keith M. Chapler of Dexter, vice president; and Dr. Samuel J. Brown of Panora, secretary and treasurer. The following two papers were presented on the scientific program: Diabetes: Modern Aspects of Treatment, Morris Margolin, M.D., of Omaha; and Urology: Its Contact with General Practice, A. G. Fleischman, M.D., of Des Moines.

### Greene County

The regular monthly meeting of the Greene County Medical Society was held at the hospital in Jefferson, Thursday, November 6. Eugene E. Simons, M.D., of Omaha, spoke on Arthritis.

J. R. Black, M.D., Secretary

### Hardin County

The Hardin County Medical Society held its regular monthly meeting Tuesday, October 28, at the Winchester Hotel in Eldora, with dinner at six-thirty. Dennis H. Kelly, M.D., of Des Moines, was the speaker for the occasion, and his subject was Measles.

W. E. Marsh, M.D., Secretary

### Johnson County

Members of the Johnson County Medical Society were guests of Dr. John H. Peck, the Oakdale Sanatorium and the State Board of Control, at the regular meeting held at Oakdale Sanatorium, Wednesday, November 5. The scientific program consisted of an address by Brian Blades, M.D., of the Washington University School of Medicine, St. Louis, on Temporary versus Permanent Collapse Therapy in the Treatment of Pulmonary Tuberculosis.

A. L. Sabs, M.D., Secretary

### Keokuk County

Thursday, October 9, a special meeting and dinner was held by members of the Keokuk County Medical Society and their wives, in honor of two Sigourney physicians, Dr. Albert P. Johnson and Dr. William Pfannebecker, who had completed fifty years of practice. These physicians were formally presented with framed letters of congratulation from the president and secretary of the Iowa State Medical Society. The speakers of the evening were Dr. Smith A. Spilman and Dr. Harold A. Spilman, both of Ottumwa. The attendance was almost 100 per cent of the membership, and almost every doctor present made his or her contribution to the speech making of the evening. Dr. Pfannebecker's acknowledgment was characteristically brief and to the point. Dr. Johnson, also characteristically, indulged in most entertaining reminiscences of his medical student days and of the "horse and buggy" days of his early practice. Altogether it was a most congenial and happy occasion.

C. L. Heald, M.D.

### Linn County

The next meeting of the Linn County Medical Society will be held in Cedar Rapids Thursday, December 11, when the society will entertain Louis J. Karnosh, M.D., associate clinical professor of nervous diseases, Western Reserve University School of Medicine, Cleveland. Dr. Karnosh will speak on Psychiatric Problems in General Practice. All members in good standing in adjoining counties are cordially invited to attend.

R. J. Stephen, M.D., Secretary

### Madison County

On Monday, October 27, the Madison County Medical Society entertained members of the Woman's Auxiliary and members of the City Council at a six-thirty dinner at Winterset. Mr. Robert C. Hanlon, public health engineer from the State Department of Health, Des Moines, gave a very interesting talk on Sanitation.

The Madison County Medical Society met Monday,

November 17, at the Winterset Community Hospital for a six-thirty dinner and regular monthly meeting. Arnold L. Nelson, M.D., of Des Moines, spoke on Carcinoma of the Bowel.

Evelyn M. Olson, M.D., Secretary

#### Muscatine County

The Muscatine County Medical Society sponsored a public meeting at the High School Auditorium, Thursday, October 23, in Muscatine. The speaker of the evening was Bert I. Beverly, M.D., assistant clinical professor of pediatrics, Rush Medical College, University of Chicago, and his subject was Problems of Adolescence.

#### Polk County

The next meeting of the Des Moines Academy of Medicine and Polk County Medical Society will be held at Younkers Tea Room in Des Moines, Wednesday, December 17, with the following program: Newer Laboratory Methods, Richard F. Birge, M.D., discussion opened by Julius S. Weingart, M.D.; Idiopathic Hypoparathyroid Tetany, Calcium Metabolism, Lee Forrest Hill, M.D., discussion opened by Dr. Birge; The Tuberculosis Problem, John Russell, M.D., discussion opened by Harry E. Ransom, M.D.; and The Surgical Treatment of Pulmonary Tuberculosis, Frank W. Fordyce, M.D., discussion opened by Maurice T. Bates, M.D.

#### Sac County

The Sac County Medical Society met at the Park Hotel in Sac City, Thursday, October 23. Byron E. Hall, M.D., of Rochester, Minnesota, was the guest speaker and his topic was The Differential Diagnosis and Treatment of the Hemorrhagic Diseases.

W. I. Evans, M.D., Secretary

#### Scott County

Results of the annual election of officers for the Scott County Medical Society, held in Davenport, Tuesday, November 4, are as follows: Dr. Harold J. Evans, president elect; Dr. Preston E. Gibson, vice president; Dr. John H. Sunderbruch, secretary; Dr. Thomas W. McMeans, treasurer; Dr. William C. Goenne, delegate; and Dr. Leo H. LaDage, alternate delegate. Dr. Harry H. Lamb, who has been serving as president elect during the past year, assumed the presidency at this meeting.

J. H. Sunderbruch, M.D., Secretary

#### Woodbury County

Lieutenant-Commander C. P. McCullough, of the United States Naval Training Station, Great Lakes, Illinois, was guest speaker for the Woodbury County Medical Society, Monday, November 24, at the Martin Hotel in Sioux City. His subject was The Medical Corps of the Naval Reserve.

W. K. Hicks, M.D., Secretary

#### Iowa and Illinois Central District Medical Association

The winter meeting of the Iowa and Illinois Central District Medical Association will be held Wednesday evening, December 10, at the Blackhawk Hotel in Davenport. After a six-thirty dinner, George A. Sywassink, M.D., of Muscatine, will give a short talk on Comments on Thyroid Surgery. The guest speaker of the evening will be Louis J. Karnosh, M.D., associate professor of nervous and mental diseases, Western Reserve University School of Medicine, Cleveland, who will speak on Radical Methods in the Treatment of Melancholia.

James Dunn, M.D., Secretary

#### PERSONAL MENTION

Dr. Richard S. Ahrens has recently become a member of the staff at The Retreat in Des Moines, to fill the vacancy created by the resignation of Dr. James B. Overton. Dr. Ahrens is a graduate of the University of Minnesota Medical School where for a number of years he was a member of the faculty while engaged in the private practice of neuropsychiatry in Minneapolis. From 1938 to 1940 he was assistant superintendent at the Fergus Falls State Hospital and more recently neuropsychiatrist with the Lemley Clinic in Rapid City, South Dakota.

Dr. Craig D. Ellyson of Waterloo was guest speaker for the East Waterloo Teachers Club, Thursday, October 23, in a symposium on "Professional Relations and Ethics". He spoke on medical ethics, while Dr. Malcolm Price, president of Iowa State Teachers College, Cedar Falls, and Mr. W. L. Beecher, Waterloo attorney, spoke on the ethics of their professions.

Dr. James P. Clark of Estherville, announces the association of Dr. Hugo Lindholm with him in the practice of medicine. Dr. Lindholm was graduated from the State University of Iowa, College of Medicine, Iowa City, and has just completed his internship at the Iowa Lutheran Hospital in Des Moines.

Dr. Eugene C. Wagner, director of the Serum Center, State Department of Health, Des Moines, spoke on "Blood Transfusions and the Relation of Such Work in Connection with Public Health", at the fourth annual dinner of the Calhoun County Health Council, held in Rockwell City, Friday, November 7.

Dr. Arthur D. Woods of State Center has announced that Dr. Richard E. Phelps will be associated with him in the practice of medicine. Dr. Phelps was graduated in 1939 from the State University of Iowa, College of Medicine, Iowa City, and interned at the Methodist Hospital in Madison,



Wisconsin. Since that time he has been a member of the staff of the Jackson Clinic in Madison.

Dr. Ben F. Wolverton of Cedar Rapids was guest speaker for the Anamosa Lions Club, at their noon meeting Monday, October 27. The subject of his address was "Heart Problems of the Business Man."

Dr. Charles H. Flynn, formerly of Tarkio, Missouri, has opened offices in Clarinda. He was graduated in 1933 from Washington University School of Medicine, St. Louis.

Dr. Vernon S. Downs has returned to Ottumwa where he opened offices the first of November. Dr. Downs was graduated in 1927 from the State University of Iowa, College of Medicine, Iowa City, and has been engaged in general practice in Lake Geneva, Wisconsin, and Los Angeles, California.

Dr. Martin A. Blackstone of Sioux City spoke on "Dietary Facts and Fads", for the Anthon Lions Club, Tuesday, October 28.

Dr. Earl F. Weir, who for the past two years has been connected with the department of anesthesia at the University Hospitals in Iowa City, has been appointed head of the department of anesthesia at the Mercy Hospital in Council Bluffs.

Dr. Robert A. Stewart, superintendent of the state hospital at Independence, was the speaker of the evening at a public meeting held in Cedar Falls, Tuesday, November 4, sponsored by the Biology Club of Teachers College. Dr. Stewart spoke on "The Influence of Heredity and Environment on Insanity".

Dr. John F. Loosbrock, who has practiced at Lacona for almost twenty years, has moved to Perry, where he will occupy the offices of the late Dr. Michael J. Donovan.

Dr. T. Frank Hersch of Cedar Rapids furnished the program for the Oelwein Rotary Club when that organization met Monday, November 10. He spoke on "Healthful Hobbies".

#### DEATH NOTICES

Budge, Ben Garfield, of Ames, aged sixty, died October 17 of coronary occlusion. He was graduated in 1909 from Northwestern University Medical School, Chicago, and at the time of his death was a member of the Story County Medical Society.

Hazard, Theodore Lincoln, of Iowa City, aged eighty-one, died October 31, after an extended illness. He was graduated in 1883 from the University of Michigan Medical School, Ann Arbor, and had long been a member of the Johnson County Medical Society.

Lee, Frank Wade, of Osage, aged eighty-two, died October 28 of uremia. He was graduated in 1887 from the State University of Iowa, College of Homeopathic Medicine, Iowa City, and at the time of his death was a member of the Mitchell County Medical Society.

Maloney, Arthur Paul, of Fonda, aged fifty-nine, died October 24, after a long illness. He was graduated in 1910 from Creighton University School of Medicine, Omaha, and at the time of his death was a Life Member of the Pocahontas County and Iowa State Medical Societies.

Padgham, James Blaine, of Ocheyedan, aged fifty-eight, died November 9 after an illness of two years. He was graduated in 1909 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Osceola County Medical Society.

Willett, Harry Cushman, of Des Moines, aged seventy-one, died suddenly October 17 in Chevy Chase, Maryland, of a heart attack. He was graduated in 1894 from Rush Medical College, University of Chicago, and at the time of his death was a member of the Polk County Medical Society.

Young, Gus Bross, of Des Moines, aged fifty-seven, died November 5 of cancer of the stomach. He was graduated in 1904 from Drake University College of Medicine, Des Moines, and had long been a member of the Polk County Medical Society.

#### TO ALL COUNTY SOCIETY OFFICERS AND COUNTY COMMITTEES ON MEDICAL PREPAREDNESS

All county society secretaries and hospital superintendents in Iowa have received copies of Medical Bulletin No. 1 from the Office of Civilian Defense. It is imperative that steps be taken to organize your county according to the plan outlined in this bulletin.

All counties by this time should have their respective local Director of Civilian Defense appointed by the Governor.

The Committee on Medical Preparedness of the Iowa State Medical Society would appreciate monthly reports on progress being made.

Thomas F. Suchomel, M.D., Chairman

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. McCLINTOCK, Iowa City

DR. R. T. LENAGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. HENRY G. LANGWORTHY, Dubuque

## Life Work of William B. Peck of Freeport, Illinois\*

1870-1941

Founder and Managing-Director of the Old Tri-State District Medical Society of Illinois, Iowa and Wisconsin and Later Inter-State Postgraduate Medical Association of North America.

By HENRY G. LANGWORTHY, M.D.  
Dubuque, Iowa

It is my privilege to present a brief summary of the life work of the late Dr. William Buckley Peck of Freeport, Illinois, in whom the medical men of Illinois, Iowa and Wisconsin have had a particular interest and special place for over a quarter of a century. We may well begin such a biography by saying that many remarkable movements and personalities have come from the state of Illinois and this one is no exception. In the attic of a few men scattered over these three prairie states and now somewhat yellow with age, will be found an old medical program of twenty-six years ago. The cover of that program is decorated with the American flag beautifully embossed in colors, reflecting the preparedness spirit of the first World War period and carrying the following words:

Birthday Party of the Confederation  
of County Medical Societies  
Northern Illinois and Southern Wisconsin  
Associated with Eastern Iowa

Masonic Temple  
Freeport, Illinois  
September 26-27, 1916

On the day preceding that gathering the Freeport *Journal Standard* had this to say, in its newspaper columns, of the organizer of the two-day session, "Dr. Peck, president of the society, is the busiest man in town overseeing every department of the program so that it is in complete readiness for the opening session tomorrow." Such

a statement was characteristic of him at all times in the life of the organization and until he died.

It has been well said that "truth is stranger than fiction" and so it proved in this instance. At the very time, in 1916, when Zeppelin air ships were crossing over the coast of England and raiding London, when the terrific fighting and war thrusts of the great German offensive against the French and English on the Somme River, seemed like the beginning of destruction for civilization, it is indeed odd that a new force for peace and medical service to humanity should have been born into the world through a small group of mid-western doctors assembled at Freeport, Illinois. Though unheralded at that time, the work of this little society, as it so rapidly took more extended form and shape, became one of the most fascinating medical romances in the history of America. At this very first birthday party the name of the Society was promptly changed to the old familiar Tri-State District Medical Society of Illinois, Iowa and Wisconsin which older physicians know so well. A new constitution was next adopted to keep pace with the ever-expanding ideas of its, as yet scarcely known, medical promoter. The purpose of the society was "to bring the physicians of three states into one organization, to hold union district meetings whenever necessary, and to do all things that will extend medical knowledge, elevate the standards of medical education and to promote a much needed acquaintanceship among the physicians living in these adjoining states."

Dr. Peck's first step toward accomplishing these

\*Presented before the Dubuque County Medical Society, September 9, 1941.



objectives was audaciously to secure the most noted medical men of the country to attend his meetings as the speakers on its programs. Here every twenty or thirty minutes, the medical leaders of the United States walked across its rostrum to deliver their message in person to the hundreds of physicians waiting to hear them. To these prairie doctors, hitherto marooned in the mud, the bringing of such renowned teachers directly to them in their own state, was a brand new idea. It proved to be the need of the day and astounded everyone in the country as it moved its annual educational meetings about the Tri-States.

The next innovation was the introduction of the so-called "dry clinics" with the presentation of patients on the stage under a spotlight so that with

that the attending physician must be a member in good ethical standing in his own profession at home. Such a meeting naturally proved the best antidote for any lack of professional enthusiasm. The public soon learned that it was beneficial to have its doctors kept up to date with the best medical information obtainable.

As the Tri-State's reputation grew and grew, other midwestern states sought to be included into its sphere of operations. To meet this demand, the name of the association was again changed to the Inter-State Postgraduate Medical Association of North America. It seems odd at this late day to look back on a board of trustees meeting in Freeport, in the early twenties, and reflect that the board actually became a bit worried over the signs of such tremendously rapid expansion. Was the managing-director attempting too much in such a short space of time? For answer, after a goodly number of other states and a few of the provinces of Canada had been included, he organized, as another extension arm of postgraduate education, the first traveling assembly of doctors in the United States, in 1923, using two special trains to the various medical departments of the eastern universities along the Atlantic seaboard. This first attempt along with many others about the United States, proved so successful for teaching purposes that in 1925 he boldly struck out still farther and began his yearly traveling assemblies of American doctors to the medical centers of Europe in cooperation with the universities and governments of these foreign countries. The thousands of doctors over this country, who have had the rare opportunity of taking one of Peck's annual tours, to observe at first hand the best medical and surgical work in European as well as South American clinics, know and testify just how much these educational trips meant not only to them but to the United States in promoting friendly medical relations between the nations of the world. It was international medical postgraduate instruction of the highest order and easily made him the best known of our medical men abroad. It rather quickly resulted in starting a large stream of European doctors visiting our shores and with the inevitable results of the first World War, the United States for the first time in her history became the acknowledged center of medicine of the entire world. Peck's now greater fall International Medical Assembly meeting promoted by the Inter-State organization blossomed forth. With its tremendous exhibits and thousands of attending doctors, meeting only in the large centers of the country capable of housing



WILLIAM B. PECK, M.D.  
1870-1941



the aid of the first type of sound amplifiers, the diagnosis and discussion could be satisfactorily given in full sight and close presence of the audience. In other words it swept away all of the old time-consuming traditions pertaining to the usual medical meeting with the presiding chairman occupying the center of the stage with a table and pitcher of water. The society further prided itself on barring legislative or medical politics within its organization of officers, a rare thing in medical circles even today. The meeting with its presentation of the galaxy of medical stars on the program was carried on like a well drilled Hollywood show. The only requirement for admission, in addition to a most modest registration fee, was

and handling the crowd, it was a sight to see. Its program men represented only the picked university professors of both hemispheres and their addresses were furnished the profession in a yearly published proceedings edited by himself during later years. There are many more accomplishments which might be cited but it would only add volume to what is already well known. Let us turn therefore to the more intimate and purely personal side of his life in order to throw light on some of the reasons for his being one of those rare medical organizing geniuses encountered only once in a generation.

Dr. William B. Peck was born in Freeport, Illinois, October 11, 1870, the son of William Ford Peck and Natalie Price Peck. He was two years old when his father moved to western Nebraska where a large claim was taken up as a homestead. The home itself was a sod house and cornstalks were burned as the winter fuel. During winter blizzards so frequent in that area, the father not infrequently tied a rope around his waist and began digging through the heavily drifting snow to get to the stock in the barn while his mother held the other end in the kitchen for safety. In summer the grasshoppers were often bad and occasionally, in their migration, hid the sun. A pioneering family life is no easy lot, but it does breed stamina. Young Peck, short of stature, but always robust and full of tremendous energy, received his education in the district school several miles away from the home. When the prairie blizzards struck, the youngsters on many occasions were forced to sleep in the school house. He was twelve years old when the family moved to Aurora, Nebraska, where his father, who was an attorney by profession, became the community's first mayor. At seventeen, the youthful Peck entered Willamette University at Portland, Oregon, from which by hard study, he received a degree of B.A. in 1893. Then followed his medical course at Rush Medical College in Chicago from which he was graduated in 1897 to locate in Freeport. Still not content with the student knowledge obtained, he sought additional outlets and went to Europe to take postgraduate work in Vienna in 1907 and in Berlin in 1908. The next year in 1909 he became an interne in the London Hospital in London, England. Undoubtedly in these early studies abroad, he developed his enthusiasm for travel and instinctively perceived both the pressing need of medical men for fresh education beyond the walks of their alma mater and ways in which such knowledge might be pre-

sented far better than had ever been done before.

Returning permanently to Freeport in 1910, he served for a time, during his earlier medical career, as Stephenson's County coroner while he strove to build up a surgical practice. On September 26, 1912, he married Alvina Weber of Merrill, Wisconsin. They had no children. During the first World War, he was a member of the county medical examining board and active in all local medical life. It was before a small group of men at the Freeport Country Club one evening in 1916, that he outlined ambitious plans for calling a meeting of the doctors of all adjoining counties so that union district meetings might be held for mutual benefit. He had then a practical idea for a solid foundation platform right at home. It was no wonder, with his enthusiasm and tireless work as a medical organizer, that the first meeting of the confederation of county medical societies, which took place a little later in the Masonic Temple in Freeport, should have been a great success. He had proceeded in a very simple but fundamental way to help keep the medical profession abreast of the advance of science. Modest and unassuming and the recipient of many honors, both at home and abroad, he never deviated from a fixed purpose in life of being of service to others. Dying in his beautiful new home in Freeport on August 20, 1941, he had fulfilled his early ambitions. He had made dreams for practical postgraduate medical education come true for thousands of medical men all over North America who deeply regret his passing. One thing may be said, he was fortunate in his selection of famous medical presidents and surrounding officers. His board of trustees were the loyal, cooperative kind; most of them have been with him since early organization days and continue in the same positions to conduct, for the future, the activities which he founded.

In conclusion, as we look back over the past twenty-six years with its flood of remembrances, the writer is conscious of the fact that it represents a golden age of medicine in this country. In a recollection of many vivid and individual figures encountered over the world, he also sees clearly, as from the first day of organization, the dynamic personality of a great medical promoter. He sees a man, simple, unaffected and unostentatious, one who has done much to develop and bring out others and to organize great forces for postgraduate medical instruction in this country and over the world at large—his name is William B. Peck of Freeport, Illinois.



## The Medical History of Palo Alto County

*Prepared by*

CLARA ANTOINETTE RASMUSSEN, B.A.

Ruthven, Iowa

(Concluded from last month)

On May 15, 1940, the corporate name of the Hospital Association was changed from Palo Alto Hospital Association to Emmetsburg Hospital Association, and new articles of incorporation were adopted which provide for a medical and surgical staff. The staff was organized as provided by articles adopted jointly by the board of directors and the hospital staff. Members are all the doctors belonging to the Palo Alto County Medical Society. Dr. H. R. Powers is the present president and Dr. Paul O. Nelson is the secretary of the staff.

The personnel of the present board of directors of Emmetsburg Hospital is: Mr. Harold Barringer, Mrs. Earl Brown, Mr. Guy Carmichael, Mr. W. F. Eagan, Mrs. P. F. Gylling, Mr. Edward Kelly, Mrs. W. R. Schroeder, Mrs. A. A. Theile, president, and Mrs. John McNamara, secretary and treasurer.

During the years the hospital has been functioning, faithful and loyal service has been rendered by the nurses who have served it. Among the nurses who have acted as superintendent the following are mentioned for their length of service: Miss Isabel White, from 1921 to 1925; Miss Emma Lorenzen, from 1925 to 1935; and Miss Eileen Higgins, from 1937 to the present time. Others who have acted as superintendent for short intervals have been: Miss Mamie Earnest, Miss Sophia Peters, Mrs. Mary Large, and Miss Meta Gade.

Citizens who have been board members other than those who served on the first or present boards are: Mr. William Fife, Mr. D. L. Johnson and Mrs. William J. Young. Outstanding service has been rendered by two secretaries of the Board: Mrs. Matthew Grier who served first as a board member and later as secretary, from the beginning until her death, and Mrs. John McNamara, the present secretary.

The hospital in Emmetsburg has been self-supporting almost from the beginning in 1921. Gifts from organizations and individuals, both for the old building and for the new, have been used for purposes of construction and equipment and have contributed to its success.

THE END

## Ledger and Account Book of One Hundred Years Ago

JEANNETTE DEAN-THROCKMORTON, M.D.,  
Des Moines, Iowa

Through the interest of Dr. R. D. Bernard of Clarion, a manuscript account book of Dr. John C. McCoy bearing the date 1835 was loaned to the Medical Library by Mr. F. J. McCoy, grandson of the pioneer doctor.

The title page is adorned with the word "Willoughby" in fancy lettering, which was the old doctor's Alma Mater. Further search brings to light that this medical college was organized in Ohio in 1834 as the Willoughby University Medical Department, thus making our pioneer doctor one of its first graduates. It was moved to Columbus, Ohio, in 1847 to be combined within the year with the Starling Medical College, which later helped form the Ohio State University College of Medicine.

Under the name of the Alma Mater appears the date January 4, 1835, followed by the owner's name, John C. McCoy, in attractive copperplate writing. The next and last embellishment to the page gives a unique distinction, since a motto is something few books and fewer people possess; this motto reads "Vivet et Viget et Nihil Desperandi" which translated tells us, "Live and flourish and despair of nothing", a good motto for us even today and doubtless of much appeal to a young doctor starting out to practice in pioneer days. The year 1835 has more meaning to us if we remember that Louis Pasteur was only twelve years old, Lord Lister only seven and Klebs just born, with ether not to be discovered until ten years later.

Favorite prescriptions through the entire book are calomel, ipecac, Dover's Powder and quinine, at the cost of 12½c, 12c, 25c and 15 grains of quinine at 18¾ cents. A standard treatment, often repeated is venesection which with a visit and medicine generally brought \$1.00. Other fees are: reducing radius for a boy \$1.00, extracting dens molaris 18¾ cents, giving a clyster 12 cents, medicine and care in uterine hemorrhage \$1.37½, consultation with Dr. Allen \$3.00. An obstetric case netted the young doctor from \$3.00 to \$3.50, with \$4.00 as the price for difficult and complicated parturition. One entrance reads, "March 25, 1838, to William Bradley for wife, to two visits and attendance in duo parturition \$5.00," which one surmises meant twins.

Opposed to these costs of medical care, we observe that the young doctor paid thirteen cents for a bushel of bran, fifty cents for two bushels of corn, 87½ cents for a bushel of salt, \$1.50 for a bushel of wheat, \$5.00 for a set of harness, and \$5.00 for a saddle. In June, 1838, he built a stable at the outlay of \$40.00, and a house erected at that time is entered as costing \$138.00, all of which went to the builder who proved to be the identical William Bradley of the duo parturition. He seems to have encountered an epidemic of smallpox in January of 1838, for almost all of the entries read "to vaccination" at 25 cents per person, for the next two months.

The back of the ledger holds his precious formulae and prescriptions from his professor of materia medica, a Dr. William M. Smith. Unfortunately, during Civil War times, the ledger was used for a scrap-book, so that although the pasted clippings have an historical interest, they are a detriment and a defacement of this old account book of medical value. The book closes July 11, 1838, and may be seen at the Iowa State Medical Library.

# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

- SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY**—By Forrest R. Davison, M.Sc., Ph.D., assistant professor of pharmacology, School of Medicine, University of Arkansas. The C. V. Mosby Company, St. Louis, 1940. Price, \$5.00.
- METHODS OF TREATMENT**—By Logan Clendening, M.D., and Edward H. Hashinger, M.D., medical department of the University of Kansas. Seventh edition. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.
- MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE**—Edited by Philip Bard, professor of physiology, Johns Hopkins University School of Medicine. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.
- ACCIDENTAL INJURIES**—By Henry H. Kessler, M.D., attending orthopedic surgeon, Newark City Hospital. Second edition, enlarged and thoroughly revised. Lea and Febiger, Philadelphia, 1941. Price, \$10.00.
- TEXTBOOK OF PEDIATRICS**—By J. P. Crozer Griffith, M.D., emeritus professor of pediatrics, University of Pennsylvania; and A. Graeme Mitchell, M.D., professor of pediatrics, University of Cincinnati. Third edition, revised and reset. W. B. Saunders Company, Philadelphia, 1941. Price, \$10.00.
- HEMORRHAGIC DISEASES**—By Kaare K. Nygaard, M.D., former fellow in surgery, The Mayo Foundation. The C. V. Mosby Company, St. Louis, 1941. Price, \$5.50.
- TECHNIC OF CONTRACEPTION CONTROL**—By Robert L. Dickinson, M.D., and W. E. Morris, M.D. The Williams and Wilkins Company, Baltimore, 1941. Price, fifty cents.
- CARDIAC CLASSICS**—By Fredrick A. Willius, M.D., and Thomas E. Keys, M.D., The Mayo Clinic. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.
- AMERICA ORGANIZES MEDICINE**—By Michael M. Davis. Harper and Brothers, New York, 1941. Price, \$3.00.
- ESSENTIALS OF DERMATOLOGY**—By Norman Tobias, M.D., senior instructor in dermatology, St. Louis University. J. B. Lippincott Company, Philadelphia, 1941. Price, \$4.75.
- ELIMINATION DIETS AND THE PATIENT'S ALLERGIES**—By Albert H. Rowe, M.D., lecturer in medicine, University of California Medical School. Lea and Febiger, Philadelphia, 1941. Price, \$3.00.
- THE NEW INTERNATIONAL CLINICS**—Volume II, New Series Four. Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1941.
- CLINICAL IMMUNOLOGY, BIOTHERAPY AND CHEMOTHERAPY**—By John A. Kolmer, M.D., professor of medicine, Temple University School of Medicine; and Louis Tuft, M.D., assistant professor of medicine, Temple University of Medicine. W. B. Saunders Company, Philadelphia, 1941. Price, \$10.00.
- MICROBES WHICH HELP OR DESTROY US**—By Paul W. Allen, Ph.D., professor of bacteriology, University of Tennessee. The C. V. Mosby Company, St. Louis, 1941. Price, \$3.50.
- OUT OF THE TEST TUBE**—By Harry N. Holmes, Ph.D., professor of chemistry, Oberlin College. Third edition, revised. Emerson Books, Inc., 251 West 19th Street, New York, 1941. Price, \$3.00.
- HANDBOOK OF COMMUNICABLE DISEASES**—By Franklin H. Top, M.D., Director, Division of Communicable Diseases and Epidemiology, Herman Kiefer Hospital and Detroit Department of Health. The C. V. Mosby Company, St. Louis, 1941. Price, \$7.50.
- SULFANILAMIDE AND RELATED COMPOUNDS IN GENERAL PRACTICE**—By Wesley W. Spink, M.D., associate professor of medicine, University of Minnesota School of Medicine. The Year Book Publishers, Chicago, 1941. Price, \$3.00.
- THE NEW INTERNATIONAL CLINICS**—Volume III, New Series Four. Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1941.

## BOOK REVIEWS

### ESSENTIALS OF DERMATOLOGY

By Norman Tobias, M.D., senior instructor in dermatology, St. Louis University. J. B. Lippincott Company, Philadelphia, 1941. Price, \$4.75.

This book, by admission of the author, is a "brief treatise on diseases of the skin, presenting the growing subject of dermatology completely and concisely without sacrifice of detail," the feat of a genius, if it could be done. Also it was designed for those "who have neither the time nor the inclination to refer to the larger standard dermatological text book."

Actually there would seem to be no crying need for more short cuts to dermatology; nevertheless this text is well written and adequately illustrated by one who has had a wealth of experience and study in the field of dermatology. J. W. Y.

### THE NEW INTERNATIONAL CLINICS, Volume II, New Series Four.

Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1941.

This is another one of this interesting and instructive series. This volume comprises ten original communications, five clinics by members of the faculty

of the Yale University School of Medicine, seven clinics by members of the hospital staffs of Lexington, Kentucky, and a review of chronic gastritis by Tumen and Lieberthal of the Jewish Hospital of Philadelphia.

Wharton presents a splendid review of the embryology, anatomy, chemistry and physiology of the adrenal glands, pointing out the specific functions of the cortex and medulla, and indicating the intimate relation of the function of the adrenal with the other glands of internal secretion. Wendkos and Robertson report their experience with caffeine in organic combination with iodine in the treatment of allergic and cardiac asthma. The drug is given by mouth and according to the authors it has been found effective in bronchospastic dyspnea when epinephrine, ephedrine, caffeine and sodium iodide have failed.

Leonard and Oughterson review the surgical treatment of hypertension in a most thorough and instructive manner, citing case histories with follow-up notes to demonstrate the results. Grover Powers of Yale reports the treatment of streptococcus empyema in the period 1927 to 1937, and since the introduction of sulfanilamide during the period 1937 to 1940. In the first period there were 31 patients with a 58 per cent mortality rate and in the second period there were twelve cases with no deaths, although five patients required thoracotomy. Rankin and Johnston present a surgical clinic on an unusually large adeno-



matous goiter, multiple malignant lesions of the large bowel, and the complications of peptic ulcer.

These are but a few of the valuable contributions in the volume. Each number contains a wide variety of articles which keep one informed on medical progress.

D. K.

#### MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE

Edited by Philip Bard, professor of physiology, Johns Hopkins University School of Medicine. The C. V. Mosby Company, St. Louis, 1941. Price, \$10.00.

This is the ninth edition of this excellent text which was first edited by Professor Macleod. The present volume is edited by Philip Bard with the collaboration of nine other authorities in various fields of physiology. The primary purpose of the text is an endeavor to correlate laboratory physiology with clinical medicine. It is a scientific text, the content of which includes the most recent concepts of the varied fields of physiology. An excellent bibliography refers one to more detailed studies of specific subjects.

The volume is divided into eight parts: the neuromuscular and central nervous systems, the special senses, the circulation, the respiration, metabolism and nutrition, the physiology of the alimentary tract, the endocrine glands, water balance and the kidney. The study of this volume is most illuminating. The revisions which occur in successive volumes demonstrate the rapid progress which is being made in the knowledge of physiological processes. The practitioner who has not recently reviewed a modern physiology will be startled at the many advances in this field of medicine. It is in marked contrast to the teaching of only a few years ago.

This text cannot be too highly recommended to the earnest student of medicine.

D. K.

#### MEDICAL DIAGNOSIS AND SYMPTOMATOLOGY

By Samuel A. Loewenberg, M.D., clinical professor of medicine, Jefferson Medical College. Fifth edition. F. A. Davis Company, Philadelphia, 1941. Price, \$12.00.

This book has been almost completely revised to keep it abreast of modern medicine with its newer fields of endocrinology, geriatrics, vitamin deficiencies, hematology, etc. The author succeeds in presenting the field of diagnosis in a brief, thorough and brilliant manner.

Chapters I to VI include discussions of temperature alterations, chills and sweats, alteration of the special senses, pain and tenderness, miscellaneous symptoms and methods of physical examination. Chapters VII to XXVIII are concerned with the anatomy, physiology, examination and physical

findings of diseases of all the various anatomic parts—bones and joints, skin, heart, lungs, intestines, kidneys, liver and spleen, the endocrines, etc. The next three chapters deal with the vitamins and vitamin deficiencies, allergy and geriatrics. The remaining six chapters include criticisms of industrial examinations, urinalysis, blood examination, exudate and body fluids, functional tests and other diagnostic tests.

The text has two-column pages and over four hundred illustrations. It is an excellent exposition of modern symptomatology, diagnosis and clinical evaluation.

J. W. C.

#### SULFONAMIDES AND RELATED COMPOUNDS IN GENERAL PRACTICE

By W. W. Spink, M.D., associate professor of medicine, University of Minnesota School of Medicine. The Year Book Publishers, Chicago, 1941. Price, \$3.00.

The author has clearly aggregated his personal observations on the clinical uses of all the sulfonamides. The text is replete with critical evaluations of the efficacy of each individual drug. The merits of each drug are discussed with respect to action, concentration, absorption, excretion, toxicity and specificity.

Separate sections are devoted to the treatment of meningitis, pneumonia, genito-urinary infections, staphylococcal infections, the local use of the drugs, etc. The final two chapters are critical of sulfaguanidine and sulfadiazine. Many graphic charts are included.

The modern practitioner will find this volume a timely guide in his practice.

E. B. W.

#### ELIMINATION DIETS AND THE PATIENT'S ALLERGIES

By Albert H. Rowe, M.D., lecturer in medicine, University of California Medical School. Lea and Febiger, Philadelphia, 1941. Price, \$3.00.

For the past several years Rowe has been the chief exponent of the use of elimination diets for the determination of food allergy. His contention has been that skin tests, especially scratch tests, are not always reliable, and that clinical trial is the only conclusive means of proving food sensitivity. At the same time the author recognizes the importance and necessity of the use of skin tests in determining causes of allergy produced by inhalants. While particular emphasis is given to the management of patients having food sensitivity, Rowe discusses all types in some detail.

Rowe's elimination diets have long been considered standard test diets and his recent book is a compilation and refinement of his years of experience.

J. W. Y.

### CLINICAL IMMUNOLOGY, BIOTHERAPY AND CHEMOTHERAPY

By John A. Kolmer, M.D., professor of medicine, Temple University School of Medicine; and Louis Tuft, M.D., assistant professor of medicine, Temple University School of Medicine. W. B. Saunders Company, Philadelphia, 1941. Price, \$10.00.

This book fills a need on the part of the general practitioner and the specialist. It is divided into two parts. Part I takes up the general aspects of immunity and the relationship of biotherapeutic and chemotherapeutic measures to them. It forms the background for a better understanding of the diagnosis, prophylaxis and treatment of disease covered in Part II.

Part I discusses the various kinds of immunity, how each is produced, where found and the significance of immunity. A thorough knowledge of these factors will give the physician a clearer understanding of diseases in general and any disease in particular.

Part II takes up the prophylaxis and treatment of various diseases and groups of diseases, discussed in the light of the basic immunologic principles which have already been explained in Part I. By combining the material in the two sections of this book one obtains a clear picture of what may be expected to happen by the employment of any given prophylactic or therapeutic agent.

The book is voluminous and detailed but each subject is concluded with a summary giving the high points which have been discussed in the complete text. This enables one to get a specific answer to a question very quickly and if more detailed information is required it is only necessary to go back to the full discussion, making the book at once a valuable one for quick reference and complete information,

R. M. S.

### ESSENTIALS OF ENDOCRINOLOGY

By Arthur Grollman, Ph.D., M.D., associate professor of pharmacology and experimental therapeutics, Johns Hopkins University. J. B. Lippincott Company, Philadelphia, 1941. Price, \$6.00.

This book is a concise cross-section of all the important essential facts regarding the endocrine glands.

The author has divided his text into five parts, which deal respectively with the glands of the cranial cavity, the branchiogenic organs, the endocrine organs of the abdominal cavity, the hormones of the reproductive system, and hormones derived from the non-endocrine organs.

The introductory section is a basic survey of endocrinology, including the history of endocrinology, methods of endocrinology, evolution of hormones, etc. The individual evaluation of all the glands,

with criticisms to include anatomy, embryology, histology, the hormone, physiology and pathology, and its clinical manifestations makes this book an excellent guide and reference.

It is an ideal book for the internist, especially in view of the revolutionary trends of endocrinology in medicine.

J. W. C.

### NUTRITIONAL DEFICIENCIES

By John B. Youmans, M.D., associate professor of medicine, Vanderbilt University Medical School. J. B. Lippincott Company, Philadelphia, 1941. Price, \$5.00.

Many pharmaceutical houses, wholesale grocers and others are now in the vitamin business, and many claims are made as to the need of these substances in the preventive and curative fields of medicine. Many rash claims are made regarding vitamins as a therapeutic agent against most all diseases. However, we do have avitaminosis and we do have subclinical deficiencies; the vitamin deficiency as an etiologic rôle in macrocytic and microcytic anemias is positive proof. Subclinical deficiencies are especially difficult to deal with although they affect a great number of people.

In this book the symptoms of vitamin deficiency, the origin and the treatment are presented. The author has taken from his own work and the latest literature, the truth, and has presented it in an easily readable, easily understandable form.

Other vitamin deficiencies in addition to food factors are discussed. One section is composed entirely of diagnoses of deficiency diseases.

This book can be commended to all doctors.

E. B. W.

### THE 1941 YEAR BOOK OF PUBLIC HEALTH

Edited by J. C. Geiger, M.D., Dr. P.H., clinical professor of epidemiology, University of California. The Year Book Publishers, Chicago, 1941. Price, \$3.00.

For the second year, we have been supplied with a group of choice articles on every phase of public health. This volume is slightly smaller than the 1940 Year Book, but the total number of articles remain about the same. The organization of the material is much more logical this year and the whole has increased in interest by the addition of a group of papers on "Hospital Hygiene" and another very timely group on "Military Hygiene."

In addition to very excellent condensations of the papers, Dr. Geiger has enlivened the whole with crisp comments gained from a long and successful career in public health. He is well able to reflect the trend of thought among public health people of today in the light of past experience, as well as present activity.

Here is a wealth of material which every person interested in public health should not be without.

R. M. S.



*The* JOURNAL  
*of the*  
Iowa State Medical Society

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INDEX

Volume XXXI, January to December

1941

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Editor: LEE FORREST HILL, M.D., Des Moines

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LEE FORREST HILL, M.D., Editor, Des Moines  
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30 575

## A

Abdominal Aorta and the Inferior Vena Cava, Obstruction of the, due to "Saddle Thrombus" and Tumor Mass Respectively	
Edward S. Brewster, M.D., Boone.....	12
Accomplishments of the Forty-ninth General Assembly in Relation to the Medical Profession.....	212
Actinomycosis (Cervicofacial) Treated with Surgical Maggots	
H. E. Thompson, M.D., and D. F. Ward, M.D., Dubuque.....	587
Actinomycosis (Probable) of the Orbit	
John A. Thorson, M. D., Dubuque, and	
E. F. Mueller, M.D., Dyersville.....	70
Acute Amebic Dysentery	
F. P. McNamara, M.D., Dubuque, and William C. Schiele, M.D., Galena, Illinois.....	489
Acute Leukemia	
Diedrich J. Haines, M.D., Des Moines.....	430
Acute Pancreatic Necrosis	
Wendell L. Downing, M.D., LeMars.....	538
Acute Surgical Conditions in the Abdomen and Their Treatment	
A. Q. Johnson, M.D., Sioux City.....	22
Adhesions, Intestinal Obstruction in the Fourth Month of Pregnancy, Due to	
F. A. Hansen, M.D., Red Oak.....	237
Air-borne Infection	
Roland Rooks, Ph.D., Iowa City.....	100
Alcohol Analysis, Taking and Preserving Blood Specimens for	
T. U. Marron, M.S., Des Moines.....	146
A.M.A., House of Delegates, Transactions of the.....	398
American College of Surgeons, Sectional Meeting in Minneapolis .....	80
American Medical Association, Broadcasts of the.....	72
American Medical Golfing Association.....	230
Analgesia (Obstetric) Practical Application of	
Cecil W. Seibert, M.D., Waterloo.....	583
Anemias (Iron Deficiency), The Etiology and Treatment of	
Willis M. Fowler, M.D., and Adelaide P. Barer, Ph.D., Iowa City .....	420
Anesthesia (Intratracheal) in Head Operations	
John A. Thorson, M.D., Dubuque.....	465
Anesthesia, Some Problems in	
Florence D. Johnston, M.D., Cedar Rapids.....	485
Annual Meeting of the Iowa Tuberculosis Association.....	122
Annual Meeting, Scientific Exhibits for the.....	47
Annual Session at Davenport.....	165
Anopheles (Iowa), Notes on the Distribution and Breeding Habitats of	
J. A. Rowe, B.S., Ames.....	279
Anorectal Diseases, Common Errors in the Diagnosis and Treatment of	
Raymond J. Jackman, M.D., Rochester, Minnesota.....	93
Appendectomy, Painless	
Ralph L. Gorrell, M.D., Clarion.....	27
Appendiceal Peritonitis, The Mortality Rate from.....	117
Appendicitis, The Decreasing Mortality Rate of	
Frederick W. Mulsow, M.D., Cedar Rapids.....	585
Appointments in the Naval Reserve.....	545
Army Medical Library, Reprints for the.....	79
Art of the Practice of Medicine, The.....	496
Ascending Aorta, Thrombosis of the, with Embolism of the Superior Mesenteric and Right Femoral Arteries	
John C. Hancock, M.D., Dubuque.....	543
AUTHORS—	
Abbott, Walter D.....	378
Agnew, F. F.....	45, 89
Anderson, Edward W.....	475
Barer, Adelaide P. (Ph.D.).....	420
Barnett, S. W.....	390
Baumeister, C. F., Sr.....	106
Baumeister, Carl F.....	106
Beal, Arline M.....	392
Biering, Walter L.....	
.....32, 73, 113, 163, 205, 249, 286, 396, 437, 492, 546, 590	
Blackstone, Martin A.....	104
Bliss, Helen E. (M.S.).....	432
Bone, Harold C.....	569
Brewster, Edward S.....	12
Brown, James Barrett.....	457
Caldwell, John W.....	388
Cary, Walter .....	284
Collins, Robert M.....	576
Conzett, Donald C.....	29
Coughlan, C. H.....	572
Crumpton, R. C.....	433
Cullen, Stuart C.....	462
Daly, J. J.....	264
Dean, Abbott M.....	57
DeGowin, Elmer L.....	155
Diddle, A. W.....	189
Downing, Wendell L.....	538
Eddy, Gaines (M.S.).....	278
Entringer, Albert J.....	281
Foley, Walter E.....	424
Fowler, Willis M.....	420
Gorrell, Ralph L.....	27
Gower, Walter E.....	234
Haines, Diedrich J.....	430
Hale, William M.....	245
Hancock, John C.....	543
Hansen, F. A.....	237
Hardin, Robert C.....	95, 158
Harris, Clinton E.....	9
Harris, Ray R.....	202
Heeren, Ralph H.....	385
Hibbe, H. B.....	160
Hicks, Wayland K.....	104
Hovde, Rieber C.....	192
Jackman, Raymond J.....	93
Johnson, A. Q.....	22
Johnston, Florence D.....	485
Jordan, Carl F.....	276
Joyce, Charles R. (B.S.).....	278
Kluszver, H. C.....	572
Kornder, Louis H.....	192
Lampe, E. L.....	202
Leinfelder, P. J.....	55
Lerner, Milton .....	197
McDowell, Frank .....	457
McNamara, F. P.....	160, 231, 246, 434, 489
Maiden, Sydnor D.....	472
Marietta, Shelley U.....	269
Marron, T. U. (M.S.).....	146
Martin, Loran M.....	572
Mathiasen, Aileen .....	533
Mengert, William F.....	189
Missildine, W. H.....	59
Moore, Pauline V.....	149
Moran, T. A.....	195
Morton, M. T.....	65
Mueller, E. F.....	70
Mulsow, Frederick W.....	585
Neurath, Otto .....	426
Obermann, Charles F.....	478
Patterson, Roy A.....	433
Paul, W. D.....	281
Petersen, Vernon W.....	7
Peterson, Frank R.....	15
Rooks, Roland (Ph.D.).....	100, 432
Rowe, J. S. (B.S.).....	279
Sage, Erwin C.....	276
Salinger, Samuel .....	514
Sanders, Theodore E.....	51
Scheele, M. H.....	110
Schiele, William C.....	489
Schuknecht, Harold .....	378
Seibert, Cecil W.....	583
Shambaugh, George E., Jr.....	373
Sharon, James P.....	240
Shellito, A. G.....	45, 89
Sibley, Edward H.....	578
Sigworth, Fred B.....	177
Skewis, John E.....	462
Smith, Ferdinand J.....	354
Snell, Albert M.....	1
Stadler, Harold .....	242



Steenrod, Emerson J.....	150
Struble, Gilbert C.....	521
Thompson, H. E.....	110, 393, 587
Thorson, John A.....	70, 465
Van Etten, Nathan B.....	511
Verbrughen, Adrien .....	415
Wagner, Eugene C.....	255
Walliker, W. M.....	130
Ward, D. F.....	393, 587
Werner, August A.....	181
Willius, Fredrick A.....	563
Winnett, E. B.....	388
Wolf, Joseph .....	424
Wolverton, Ben F.....	526
Young, E. R.....	29
Ziferstein, I. ....	531
Auxiliary News, Woman's.....	
.....39, 83, 124, 170, 218, 258, 346, 404, 446, 498, 552, 598	
Avian Tubercle Bacilli, The Occurrence of, in Dressed Poultry	
Helen E. Bliss, M.S., and Roland Rooks, Ph.D.,	
Iowa City .....	432

## B

Bacteriology of Poliomyelitis, Recent Advances in the	
William M. Hale, M.D., Iowa City.....	245
Basic Growth Types	
August A. Werner, M.D., St. Louis, Missouri.....	181
"Blitz" Warfare, Psychologic Effects of.....	549
Blood and Blood Substitutes, U.S.P. Advisory Board on.....	162
Blood Specimens, Taking and Preserving, for Alcohol	
Analysis	
T. U. Marron, M.S., Des Moines.....	146
Blood (Stored), Military Uses of	
Robert C. Hardin, M.D., Iowa City.....	158
Blood (Stored), The Use of, in Civil Medicine	
Elmer L. DeGowin, M.D., Iowa City.....	155
Blood Transfusion Association and the Plasma for England	
Project	
Eugene C. Wagner, M.D., Des Moines.....	255
Book Shelf, The Journal.....	
.....48, 91, 132, 179, 229, 267, 356, 412, 455, 509, 561, 608	
Britain Appeals for American Doctors.....	252
Broadcasts of the American Medical Association.....	72
Buchanan County, The History of Medicine in	
F. F. Agnew, M.D., and A. G. Shellito, M.D., Inde-	
pendence .....	45, 89
Burns (Fresh), Treatment of, with Scarlet Red Bandage and	
Moist Sulfanilamide Dressings	
Walter E. Gower, M.D., Pocahontas.....	234

## C

Calcification of the Mitral Cusps	
F. P. McNamara, M.D., Dubuque.....	246
Cancer of the Uterine Cervix, How Not to Treat	
F. P. McNamara, M.D., Dubuque.....	434
Cancer, The Fight Against.....	167
Certain Considerations of Coronary Disease	
Fredrick A. Willius, M.D., Rochester, Minnesota.....	563
Cervicofacial Actinomycosis Treated with Surgical Maggots	
H. E. Thompson, M.D., and D. F. Ward, M.D., Dubuque.....	587
Cesarean Section, Postmortem	
T. A. Moran, M.D., Melrose.....	195
Chemotherapy in Dysentery.....	252
Child Development and Parent Education, Iowa Confer-	
ence on .....	256
Children in a Democracy.....	35
Children, Nonspecific Lung Disease in	
Clinton E. Harris, M.D., Grinnell.....	9
China, Medical Needs in.....	178
Cholecystectomies, A Statistical Review of 109 Consecutive	
Louis H. Kornder, M.D., and Rieber C. Hovde, M.D.,	
Davenport .....	192
Chorioma of the Testicles	
F. P. McNamara, M.D., and H. B. Hibbe, M.D.,	
Dubuque .....	160
Choroid, Melanoma of the, with Extensive Abdominal Metas-	
tases	
H. E. Thompson, M.D., and M. H. Scheele, M.D., Du-	
bucque .....	110

Chronic Inversion of the Uterus	
Arline M. Beal, M.D., Davenport.....	392
Civil Medicine, The Use of Stored Blood in	
Elmer L. DeGowin, M.D., Iowa City.....	155
Clarification of Premarital Legislation.....	285
Cleveland Meeting, The.....	289
Clinical Aids in the Diagnosis of Heart Diseases in General	
Practice	
Otto Neurath, M.D., Sigourney.....	426
Clinical Notes from the College of Medicine.....	155, 197, 242, 281
Clinical Observations of Acute Poliomyelitis, Some	
Harold Stadler, M.D., Iowa City.....	242
Clinical Types of Hepatic Insufficiency and Their Treatment	
Albert M. Snell, M.D., Rochester, Minnesota.....	1
Clinton County, Pioneer Doctors of	
W. M. Walliker, M.D., Clinton.....	130
Collection Agencies in Iowa.....	168
Colonel Fairchild Dies.....	47
Combined Immunization Against Tetanus and Diphtheria.....	400
Common Cold, Prophylaxis of the.....	494
Common Errors in the Diagnosis and Treatment of Ano-	
rectal Diseases	
Raymond J. Jackman, M.D., Rochester, Minnesota.....	93
Congenital Deformities	
Emerson J. Steenrod, M.D., Iowa Falls.....	150
Congenital Hypertrophic Pyloric Stenosis	
Ray R. Harris, M.D., Dubuque, and E. L. Lampe, M.D.,	
Bellevue .....	202
Congress on Industrial Health.....	121
Conjunctiva and Cornea, Hypersensitiveness of the	
H. C. Kluever, M.D., C. H. Coughlan, M.D., and Loran	
M. Martin, M.D., Fort Dodge.....	572
Convulsive Therapy (Metrazol) of Mental Disease	
I. Ziferstein, M.D., Mt. Pleasant.....	531
Coronary Disease, Certain Considerations of	
Fredrick A. Willius, M.D., Rochester, Minnesota.....	563

## D

Davenport Session, The.....	251
Death Notices...44, 129, 176, 225, 263, 353, 407, 449, 502, 556, 603	
Decreasing Mortality Rate of Appendicitis, The	
Frederick W. Mulsow, M.D., Cedar Rapids.....	585
Deferment of Medical Students and Internes.....	594
Deformities, Congenital	
Emerson J. Steenrod, M.D., Iowa Falls.....	150
Diabetes Mellitus with Pancreatic Calculi and Malignant	
Endocarditis	
E. B. Winnett, M.D., and John W. Caldwell, M.D.,	
Des Moines .....	388
Diagnosis of Gallbladder Disease	
Edward H. Sibley, M.D., Sioux City.....	578
Diphtheria, Combined Immunization Against Tetanus and.....	400
Directory of Medical Specialists, New.....	248
Dog Tick, Seasonal Notes on the	
Gaines Eddy, M.S., and Charles R. Joyce, B.S., Ames.....	278
Draftees, New Plans for Physical Examination of.....	595
Draftees, Physical Rehabilitation of Rejected.....	549
Dubuque, Iowa, A Malaria Outbreak in	
Albert J. Entringer, M.D., Dubuque.....	281
Dysentery, Chemotherapy in.....	252

## E

Early Jones County Medical History	
Fred B. Sigworth, Anamosa.....	177
EDITORIALS—	
Accomplishments of the Forty-ninth General Assembly in	
Relation to the Medical Profession.....	212
Annual Session at Davenport.....	165
Art of the Practice of Medicine, The.....	496
Britain Appeals for American Doctors.....	252
Chemotherapy in Dysentery.....	252
Children in a Democracy.....	35
Cleveland Meeting, The.....	289
Collection Agencies in Iowa.....	168
Combined Immunization Against Tetanus and Diph-	
theria .....	400
Congress on Industrial Health.....	121
Davenport Session, The.....	251
Deferment of Medical Students and Internes.....	594





Intratracheal Anesthesia in Head Operations	
John A. Thorson, M.D., Dubuque.....	465
Inversion (Chronic) of the Uterus	
Arline M. Beal, M.D., Davenport.....	392
Iowa Conference on Child Development and Parent Education	
.....	256
Iowa Medical Golfers in Seventh Annual Tournament.....	266
Iowa's Premarital Law.....	211
Iowa Tuberculosis Association, Annual Meeting of the.....	122
Iron Deficiency Anemias, The Etiology and Treatment of	
Willis M. Fowler, M.D., and Adelaide P. Barer, Ph.D.,	
Iowa City .....	420

## J

Jones County Medical History, Early	
Fred B. Sigworth, M.D., Anamosa.....	177
Journal Book Shelf, The.....	
.....48, 91, 132, 179, 229, 267, 356, 412, 455, 509, 561, 608	

## L

Laboratories and Serologic Tests.....	549
Ledger and Account Book of One Hundred Years Ago	
Jeannette Dean-Throckmorton, M.D., Des Moines.....	607
Legislation (Federal) Now Pending.....	548
Legislation, Pending National and State Medical.....	116
Leukemia, Acute	
Diedrich J. Haines, M.D., Des Moines.....	430
Life Work of William B. Peck of Freeport, Illinois	
Henry G. Langworthy, M.D., Dubuque.....	604
Liquid Petrolatum—Use with Caution.....	547
Low Toxicity of Sulfadiazine, The.....	398
Lung Disease (Nonspecific) in Children	
Clinton E. Harris, M.D., Grinnell.....	9
Lymphatic Leukemia (Subleukemic) with Secondary Anemia	
Walter Cary, M.D., Dubuque.....	284
Lymphogranuloma Inguinale Venereum	
James P. Sharon, M.D., Des Moines.....	240

## M

Maggots (Surgical) Cervicofacial Actinomycosis Treated with	
H. E. Thompson, M.D., and D. F. Ward, M.D., Dubuque.....	587
Malaria Outbreak in Dubuque, Iowa, A	
Albert J. Entringer, M.W., Dubuque.....	281
Malignant Tumors, Spontaneous Recession of	
C. F. Baumeister, Sr., M.D., Avoca, and Carl F. Baumeister, M.D., San Jose, California.....	106
Marriages.....44, 88, 129, 353, 407, 449, 502, 556	
Medical Aid to China.....	401
Medical Citizen of 1941, The	
Nathan B. Van Etten, M.D., New York, New York.....	511
Medical History of Palo Alto County, The	
Clara A. Rasmussen, B.A., Ruthven.....408, 450, 503, 557, 607	
Medical Needs in China.....	178
Medical Preparedness.....36, 79, 122, 168, 212, 254, 496	
Medical Profession and National Defense, The.....	593
Medical Service, National Conference on.....80, 118	
Medical Specialists, New Directory of.....	248
Medicine in the Nineteenth Century.....	288
Melanoma of the Choroid with Extensive Abdominal	
Metastases	
H. E. Thompson, M.D., and M. H. Scheele, M.D., Dubuque .....	110
Membership Roster of the Iowa State Medical Society.....	359
Meningitis, Type I Pneumococcus Mastoiditis with	
H. E. Thompson, M.D., and D. F. Ward, M.D., Dubuque.....	393
Menstrual Bleeding, The Relation of the Thyroid Gland to	
Robert M. Collins, M.D., Council Bluffs.....	576
Mental Disease, Metrazol Convulsive Therapy of	
I. Ziferstein, M.D., Mt. Pleasant.....	531
Mentally Unsuitable Selectee, The.....	495
Metrazol Convulsive Therapy of Mental Disease	
I. Ziferstein, M.D., Mt. Pleasant.....	531
Military Needs, Recent Therapeutic Advances and Their	
Application to	
Brigadier-General Shelley U. Marietta, M.D., Washington, D. C.....	269
Military Uses of Stored Blood	
Robert C. Hardin, M.D., Iowa City.....	158

Minutes of Meetings of State Society Officers and Committees.....	31, 112, 216, 358, 444, 485, 595
Minutes of the Iowa State Medical Society, Ninetieth Annual Session .....	290
Mitchell County Anniversary Meeting.....	90
Mitral Cusps, Calcification of the	
F. P. McNamara, M.D., Dubuque.....	246
Modern Treatment by X-Ray	
Aileen Mathiasen, M.D., Des Moines.....	533
Moore, Edwin A. (Gus), 1872-1941.....	358
Moore, Fred, 1883-1941.....	209, 226
More Common Nervous Diseases of the Spinal Cord, The	
Adrien Verbrugghen, M.D., Chicago, Illinois.....	415
Mortality Rate from Appendiceal Peritonitis, The.....	117
Mortality Rate of Appendicitis, The Decreasing	
Frederick W. Mulsow, M.D., Cedar Rapids.....	585

## N

Narcotic Act Amended.....	495
National and State Medical Legislation, Pending.....	116
National Conference on Medical Service.....80, 118	
National Defense, The Medical Profession and.....	593
National Guard Medical Officers on Active Duty.....	402
National Youth Administration, Health Project of the.....	77
Naval Reserve, Appointments in the.....	545
Neisserian Society Announces Prize.....	395
New Directory of Medical Specialists.....	248
New Medical Directory .....	444
New Plans for Physical Examination of Draftees.....	595
New Test for Pregnancy, A.....	209
New Year Begins, A.....	34
Nineteenth Century, Medicine in the.....	288
Ninetieth Annual Session, Minutes of the Iowa State Medical Society .....	290
Ninetieth Annual Session, Program of the.....	135
Ninetieth Annual Session, Transactions of the House of Delegates .....	292
Nonspecific Lung Disease in Children	
Clinton E. Harris, M.D., Grinnell.....	9
Nonspecific Protein Therapy in Ocular Disease	
Theodore E. Sanders, M.D., St. Louis, Missouri.....	51
Notes on the Distribution and Breeding Habitats of Iowa	
Anopheles	
J. A. Rowe, B.S., Ames.....	279

## O

## OBITUARIES—

Anderson, William Elmer.....	263
Aschenbrenner, Carl .....	176
Bickley, Carl Clifford.....	44
Brown, Joseph .....	502
Budge, Ben Garfield .....	603
Burgess, Jonathan Arthur W.....	225
Cowen, Joseph Merle .....	44
Decker, John Joseph .....	44
Desmond, Thomas Francis.....	129
Donovan, Michael Joseph.....	353
Engle, Harry Perry.....449, 454	
Eslick, Louis Edward.....	353
Fairchild, David S.....	47
Ficke, Emil Otto.....	556
Hall, Harry Patrick.....	407
Hazard, Theodore Lincoln .....	603
Henneger, William Andrew.....	502
Henry, Rex Vale.....	263
Hope, Frank George.....	556
Houghton, Frederick Walker.....	129
Howell, Chauncey Wyckoff.....	176
Huntton, Gardner A.....	353
Leahy, Paul Eugene.....	129
Lee, Frank Wade .....	603
Madden, William Dunn.....	225
Maloney, Arthur Paul.....	603
McColm, Charles W.....	129
McMillan, Edwin C.....	129
Meythaler, Arthur J.....	502
Moore, Edwin Augustus.....	353, 358

Moore, Fred .....	225, 226	Plasma for England Project, Blood Transfusion Association and the Eugene C. Wagner, M.D., Des Moines.....	255
Myers, Lynn Lewis.....	263	Pneumococcus Mastoiditis (Type I) with Meningitis H. E. Thompson, M.D., and D. F. Ward, M.D., Dubuque.....	393
Naae, Thorleif T.....	449	Pneumonia Deaths, Statistical Study of.....	593
Norton, William Sheffield.....	502	Pneumonia, The Treatment of Ben F. Wolverton, M.D., Cedar Rapids.....	526
Padgham, James Blaine.....	603	Poliomyelitis, Recent Advances in the Bacteriology of William M. Hale, M.D., Iowa City.....	245
Rice, Rose Hammond.....	502	Poliomyelitis Season Begins.....	440
Rohlf, William Amos.....	129, 131	Poliomyelitis, Some Clinical Observations of Acute Harold Stadler, M.D., Iowa City.....	242
Russell, Charles R.....	407	Pooled Human Serum, The Use of.....	34
Ryan, George Chester.....	502	Postgraduate Course in Obstetrics.....	436
Simeral, Fred Ernest.....	449	Postmortem Cesarean Section T. A. Moran, M.D., Melrose.....	195
Smith, Edgar Francis.....	176	Practical Application of Obstetric Analgesia Cecil W. Seibert, M.D., Waterloo.....	583
Stone, Roy Daniels.....	225	Pregnancy, A New Test for.....	209
Throckmorton, Tom Morford.....	47	Premarital Law, Iowa's.....	211
Tyler, E. K.....	47	Premarital Legislation, Clarification of.....	285
Wagner, William Christian.....	449	President's Address, The F. P. McNamara, M.D., Dubuque.....	231
Walter, Augustus F.....	502	Prevalence of Disease.....	178
Willett, Harry Cushman.....	603	Probable Actinomycosis of the Orbit John A. Thorson, M.D., Dubuque, and E. F. Mueller, M.D., Dyersville .....	70
Wiltse, Edward W.....	129	Professional Ethics in 1852 Ferdinand J. Smith, M.D., Milford.....	354
Woodbridge, Ward .....	129	Program of the Ninetieth Annual Session.....	135
Wright, Howard Jesse.....	556	Progress on the New Pharmacopoeia.....	36
Wright, Jane Drusie McIntosh.....	263	Prophylactic and Therapeutic Use of Oxygen in the Surgical Patient Stuart C. Cullen, M.D., and John E. Skewis, M.D., Iowa City .....	462
Young, Gus Bross .....	603	Prophylaxis in Rheumatic Fever.....	166
Obstetric Analgesia, Practical Application of Cecil W. Seibert, M.D., Waterloo.....	583	Prophylaxis of the Common Cold.....	494
Obstetric Anesthesia in the Home Pauline V. Moore, M.D., Iowa City.....	149	Psychologic Effects of "Blitz" Warfare.....	549
Obstetric, Postgraduate Course in.....	436	Public's Interest in High Professional Standards, The F. P. McNamara, M.D., Dubuque.....	231
Obstruction (Intestinal) in the Fourth Month of Pregnancy Due to Adhesions F. A. Hansen, M.D., Red Oak.....	237	Puerperal Sepsis, The Sulfonamides in A. W. Diddle, M.D., and William F. Mengert, M.D., Iowa City .....	189
Obstruction of the Abdominal Aorta and the Inferior Vena Cava due to "Saddle Thrombus" and Tumor Mass Res- pectively Edward S. Brewster, M.D., Boone.....	12	Pulmonary Tuberculosis, Results After Thoracoplasty for Vernon W. Petersen, M.D., Iowa City.....	7
Occurrence of Avian Tubercle Bacilli in Dressed Poultry, The Helen E. Bliss, M.S., and Roland Rooks, Ph.D., Iowa City .....	432	Pyloric Stenosis, Congenital Hypertrophic Ray R. Harris, M.D., Dubuque, and E. L. Lampe, M.D., Bellevue .....	202
Ocular Disease, Nonspecific Protein Therapy in Theodore E. Sanders, M.D., St. Louis, Missouri.....	51		
Ocular Phobias, Treatment of Abbott M. Dean, Council Bluffs.....	57	R Radio Schedule, Speakers Bureau.....	280, 447
Official Issue, The.....	344	Recent Advances in the Bacteriology of Poliomyelitis William M. Hale, M.D., Iowa City.....	245
Ophthalmology, Industrial Gilbert C. Struble, M.D., Ottumwa.....	521	Recent Therapeutic Advances and Their Application to Mili- tary Needs Brigadier-General Shelley U. Marietta, M.D., Washing- ton, D. C.....	269
Orbit, Probable Actinomycosis of the John A. Thorson, M.D., Dubuque, and E. F. Mueller, M.D., Dyersville.....	70	Red Cross, Europe's War Victims Aided by.....	550
Outbreak of Rocky Mountain Spotted Fever, An Carl F. Jordan, M.D., Des Moines, and Erwin C. Sage, M.D., Burlington .....	276	Rehabilitation of Rejected Draftees, Physical.....	549
Oxygen in the Surgical Patient, The Prophylactic and Thera- peutic Use of Stuart C. Cullen, M.D., and John E. Skewis, M.D., Iowa City .....	462	Relation of the Thyroid Gland to Menstrual Bleeding, The Robert M. Collins, M.D., Council Bluffs.....	576
		Reprints for the Army Medical Library.....	79
P Painless Appendectomy Ralph L. Gorrell, M.D., Clarion.....	27	Resolutions of Muscatine County Medical Society.....	47
Palo Alto County, The Medical History of Clara A. Rasmussen, B.A., Ruthven.....	408, 450, 503, 557, 607	Results After Thoracoplasty for Pulmonary Tuberculosis Vernon W. Petersen, M.D., Iowa City.....	7
Pancreatic Calculi and Malignant Endocarditis, Diabetes Mellitus with E. B. Winnett, M.D., and John W. Caldwell, M.D., Des Moines .....	388	Retropositions and Incarceration of the Pregnant Uterus S. W. Barnett, M.D., Cedar Falls.....	390
Pancreatic Necrosis, Acute Wendell L. Downing, M.D., LeMars.....	538	Rheumatic Fever, Prophylaxis in.....	166
Pending National and State Medical Legislation.....	116	Rheumatic Heart Disease .....	592
Persistence of Function of Skin Grafts Through Long Pe- riods of Growth James Barrett Brown, M.D., and Frank McDowell, M.D., St. Louis, Missouri .....	457	Rocky Mountain Spotted Fever, An Outbreak of Carl F. Jordan, M.D., Des Moines, and Erwin C. Sage, M.D., Burlington .....	276
Personal Mention....	43, 87, 128, 176, 263, 352, 407, 448, 556, 602	Rohlf, William Amos, 1867-1941.....	131
Pharmacopoeia, Progress on the New.....	36		
Physical Efficiency, Increasing .....	289	S Scapula Alata Walter E. Foley, M.D., and Joseph Wolf, M.D., Dav- enport .....	424
Physical Fitness Among Registrants.....	76		
Physical Rehabilitation of Rejected Draftees.....	549		
Pioneer Doctors of Clinton County W. M. Walliker, M.D., Clinton.....	130		



Scientific Exhibits for the Annual Meeting.....	47
Seasonal Notes on the Dog Tick	
Gaines Eddy, M.S., and Charles R. Joyce, B.S., Ames.....	278
Sedatives, The Use and Abuse of	
Charles F. Obermann, M.D., Cherokee.....	478
Selectee, The Mentally Unsuitable.....	495
Serologic Tests, Laboratories and.....	549
Serum, The Use of Pooled Human.....	34
Seventh Annual Tournament, Iowa State Medical Golf Association.....	144, 266
Severe Gastro-intestinal Complication Following the Use of Sulfapyridine	
Sydney D. Maiden, M.D., Council Bluffs.....	472
Significant X-Ray Findings in Heart Disease	
Harold C. Bone, M.D., Des Moines.....	569
Sinus Disease: Some Practical Considerations	
Samuel Salinger, M.D., Chicago, Illinois.....	514
Skin Grafts, Persistence of Function of, Through Long Periods of Growth	
James Barrett Brown, M.D., and Frank McDowell, M.D., St. Louis, Missouri.....	457
Smallpox in Iowa, Third Attack on, Begins.....	547
Social Hygiene Day, Fifth National.....	78

## SOCIETY PROCEEDINGS—

Adair County.....	85
Audubon County.....	127
Black Hawk County.....	224, 262, 601
Boone County.....	85
Bremer County.....	41, 85, 127, 262, 352, 501, 601
Buchanan County.....	85, 406, 501
Butler County.....	41
Calhoun County.....	224, 501
Cass County.....	85, 224, 352
Cerro Gordo County.....	41, 85, 127, 175, 224, 555, 601
Cherokee County.....	85
Chickasaw County.....	41, 85, 555
Crawford County.....	224
Dallas-Guthrie Society.....	85, 224, 406, 601
Davis County.....	41
Decatur County.....	41
Des Moines County.....	85
Dubuque County.....	41, 224, 406
Emmet County.....	85
Fayette County.....	41
Franklin County.....	42, 262
Fremont County.....	127
Greene County.....	85, 127, 175, 224, 262, 352, 448, 501, 601
Grundy County.....	127
Hancock-Winnebagos Society.....	86
Hardin County.....	42, 127, 224, 262, 352, 406, 555, 601
Henry County.....	86, 127
Humboldt County.....	127, 224
Iowa and Illinois Central District Medical Association.....	263, 448, 602
Iowa County.....	42
Jackson County.....	127, 406, 555
Jasper County.....	42, 224
Jefferson County.....	86
Johnson County.....	42, 86, 127, 175, 224, 262, 555, 601
Jones County.....	555
Keokuk County.....	262, 601
Lee County.....	42, 224
Linn County.....	42, 86, 128, 175, 262, 501, 555, 601
Louisia County.....	352, 555
Lucas County.....	86
Madison County.....	42, 86, 128, 175, 225, 501, 601
Marion County.....	42, 501
Mitchell County.....	86
Monroe County.....	352
Muscatine County.....	42, 175, 602
Northwest Iowa Medical Society.....	263
O'Brien County.....	175
Osceola County.....	86
Page County.....	86
Pocahontas County.....	225, 262

Polk County.....	87, 128, 175, 225, 262, 501, 555, 602
Pottawattamie County.....	43, 225
Poweshiek County.....	87, 406
Sac County.....	43, 87, 128, 175, 225, 555, 602
Scott County.....	43, 87, 128, 175, 225, 501, 602
Shelby County.....	128, 352
Sioux County.....	128
Sioux Valley Medical Society.....	556
Story County.....	43
Tama County.....	87, 176, 262
Tri-County Medical Society.....	352
Twin Lakes District Medical Society.....	406
Upper Des Moines Medical Society.....	406
Van Buren County.....	43, 225
Wapello County.....	43, 128, 176, 225, 502, 555
Warren County.....	502
Washington County.....	43, 262, 555
Wayne County.....	43, 406
Webster County.....	87, 263
Winnebago County.....	87
Woodbury County.....	43, 87, 128, 225, 263, 352, 556, 602
Wright County.....	176
Some Clinical Observations of Acute Poliomyelitis	
Harold Stadler, M.D., Iowa City.....	242
Some Facts About Encephalitis.....	441
Some Problems in Anesthesia	
Florence D. Johnston, M.D., Cedar Rapids.....	485
Speakers Bureau Activities.....	38, 81, 123, 169, 217, 257, 345, 403, 445, 497, 551, 597
Speakers Bureau Radio Schedule.....	280, 447
Special Institutes on Industrial Health.....	254
Spinal Cord, The More Common Nervous Diseases of the	
Adrien Verbrugghen, M.D., Chicago, Illinois.....	415
Spontaneous Recession of Malignant Tumors	
C. F. Baumeister, Sr., M.D., Avoca, and Carl F. Baumeister, M.D., San Jose, California.....	106
State Department of Health	
Walter L. Bierring, M.D., Des Moines.....	32, 73, 113, 163, 205, 249, 286, 396, 437, 492, 546, 590
State Society Officers and Committees, 1941-1942.....	371
State Society of Iowa Medical Women.....	140
Statewide Immunization Program Continued.....	440
Statistical Review of 109 Consecutive Cholecystectomies, A	
Louis H. Kornder, M.D., and Rieber C. Hovde, M.D., Davenport.....	192
Statistical Study of Pneumonia Deaths.....	593
Stored Blood in Civil Medicine, The Use of	
Elmer L. DeGowin, M.D., Iowa City.....	155
Stored Blood, Military Uses of	
Robert C. Hardin, M.D., Iowa City.....	158
Subacute Bacterial Endocarditis	
M. T. Morton, M.D., Estherville.....	65
Subacute Bacterial Endocarditis, The Variability of Embolic Phenomena in	
Robert C. Hardin, M.D., Iowa City.....	95
Subleukemic Lymphatic Leukemia with Secondary Anemia	
Walter Cary, M.D., Dubuque.....	284
Sulfadiazine, The Low Toxicity of.....	398
Sulfanilamide Dressings, Treatment of Fresh Burns with Scarlet Red Bandage and Moist	
Walter E. Gower, M.D., Pocahontas.....	234
Sulfapyridine, Severe Gastro-intestinal Complication Following the Use of	
Sydney D. Maiden, M.D., Council Bluffs.....	472
Sulfathiazole, Influenza Meningitis Treated Successfully with	
Roy A. Patterson, M.D., and R. C. Crumpton, M.D., Webster City.....	433
Sulfathiazole in Gonorrheal Infections of the Male, The Use of	
Martin A. Blackstone, M.D., and Wayland K. Hicks, M.D., Sioux City.....	104
Sulfonamides in Puerperal Sepsis, The	
A. W. Diddle, M.D., and William F. Mengert, M.D., Iowa City.....	189
Summer Round-Up, The 1941.....	167
Symposium on Virus Diseases.....	162

## T

Taking and Preserving Blood Specimens for Alcohol Analysis	
T. U. Marron, M.S., Des Moines.....	146
Testicle, Chorioma of the	
F. P. McNamara, M.D., and H. B. Hihhe, M.D., Duquque.....	160
Tetanus and Diphtheria, Combined Immunization Against.....	400
Third Attack on Smallpox in Iowa Begins.....	547
This Year It's Cleveland.....	210
Thoracoplasty for Pulmonary Tuberculosis, Results after	
Vernon W. Petersen, M.D., Iowa City.....	7
Throckmorton, Tom Morford, 1852-1940.....	47
Thrombosis of the Ascending Aorta with Embolism of the	
Superior Mesenteric and Right Femoral Arteries	
John C. Hancock, M.D., Duquque.....	543
Thyroid Gland, The Relation of, to Menstrual Bleeding	
Robert M. Collins, M.D., Council Bluffs.....	576
Toxicity of Sulfadiazine, The Low.....	398
Transactions of the A.M.A. House of Delegates.....	398
Transactions of the House of Delegates, Ninetieth Annual	
Session .....	292
Transthoracic Cavity Aspiration	
Milton Lerner, M.D., Oakdale.....	197
Treatment by X-Ray, Modern	
Aileen Mathiasen, M.D., Des Moines.....	533
Treatment of Fresh Burns with Scarlet Red Bandage and	
Moist Sulfanilamide Dressings	
Walter E. Gower, M.D., Pocahontas.....	234
Treatment of Ocular Phobias	
Abbott M. Dean, M.D., Council Bluffs.....	57
Treatment of Pneumonia, The	
Ben F. Wolverton, M.D., Cedar Rapids.....	526
Tuberculosis Association Endorses Examinations.....	122
Type I Pneumococcus Mastoiditis with Meningitis	
H. E. Thompson, M.D., and D. F. Ward, M.D., Dubuque.....	393

## U

Use and Abuse of Sedatives, The	
Charles F. Obermann, M.D., Cherokee.....	478
Use of Pooled Human Serum, The.....	34
Use of Stored Blood in Civil Medicine, The	
Elmer L. DeGowin, M.D., Iowa City.....	155

Use of Sulfathiazole in Gonorrheal Infections of the Male, The	
Martin A. Blackstone, M.D., and Wayland K. Hicks,	
M.D., Sioux City.....	104
Uses of Stored Blood, Military	
Robert C. Hardin, M.D., Iowa City.....	158
U.S.P. Advisory Board on Blood and Blood Substitutes.....	162
Uterine Cervix, How Not to Treat Cancer of the	
F. P. McNamara, M.D., Dubuque.....	434
Uterus, Chronic Inversion of the	
Arline M. Beal, M.D., Davenport.....	392
Uterus, Retropositions and Incarceration of the Pregnant	
S. W. Barnett, M.D., Cedar Falls.....	390

## V

Vaccine for Influenza, A.....	76
Variability of Embolic Phenomena in Subacute Bacterial	
Endocarditis, The	
Robert C. Hardin, M.D., Iowa City.....	95
Verdict Favors the Government.....	210
Vertigo	
Walter D. Abbott, M.D., and Harold Schuknecht, M.D.,	
Des Moines .....	378
Virus Disease, Symposium on.....	162

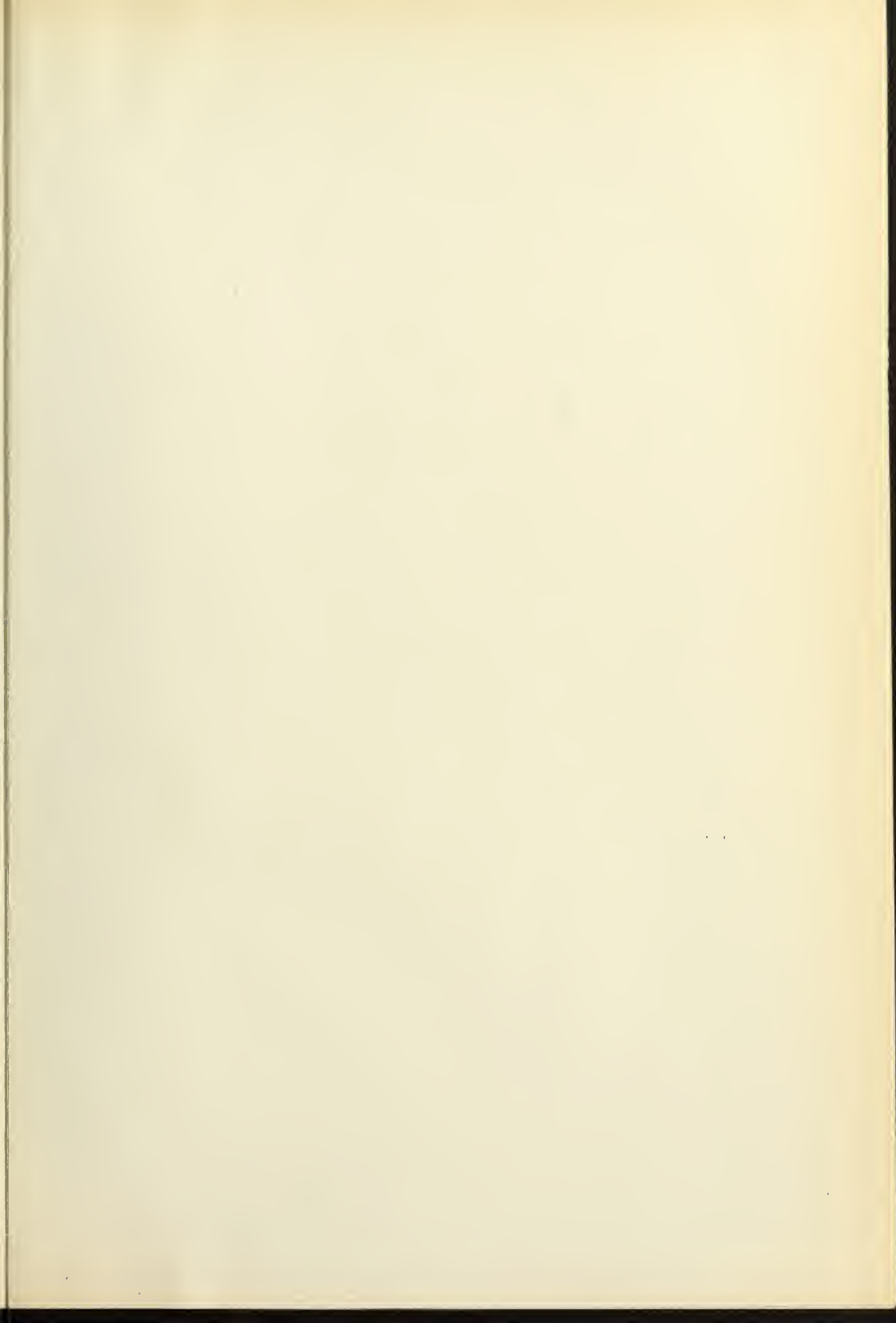
## W

Winnebago County Physicians	
J. J. Daly, M.D., Decorah.....	264
Winning the Battle, Once and for All.....	596
Woman's Auxiliary News.....	39, 83, 124, 170, 218, 258, 346, 404, 446, 498, 552, 598
Woman's Auxiliary to the Iowa State Medical Society.....	145
Wrist, Giant Cell Xanthoma of the	
D. C. Conzett, M.D., and E. R. Young, M.D., Dubuque..	29

## X

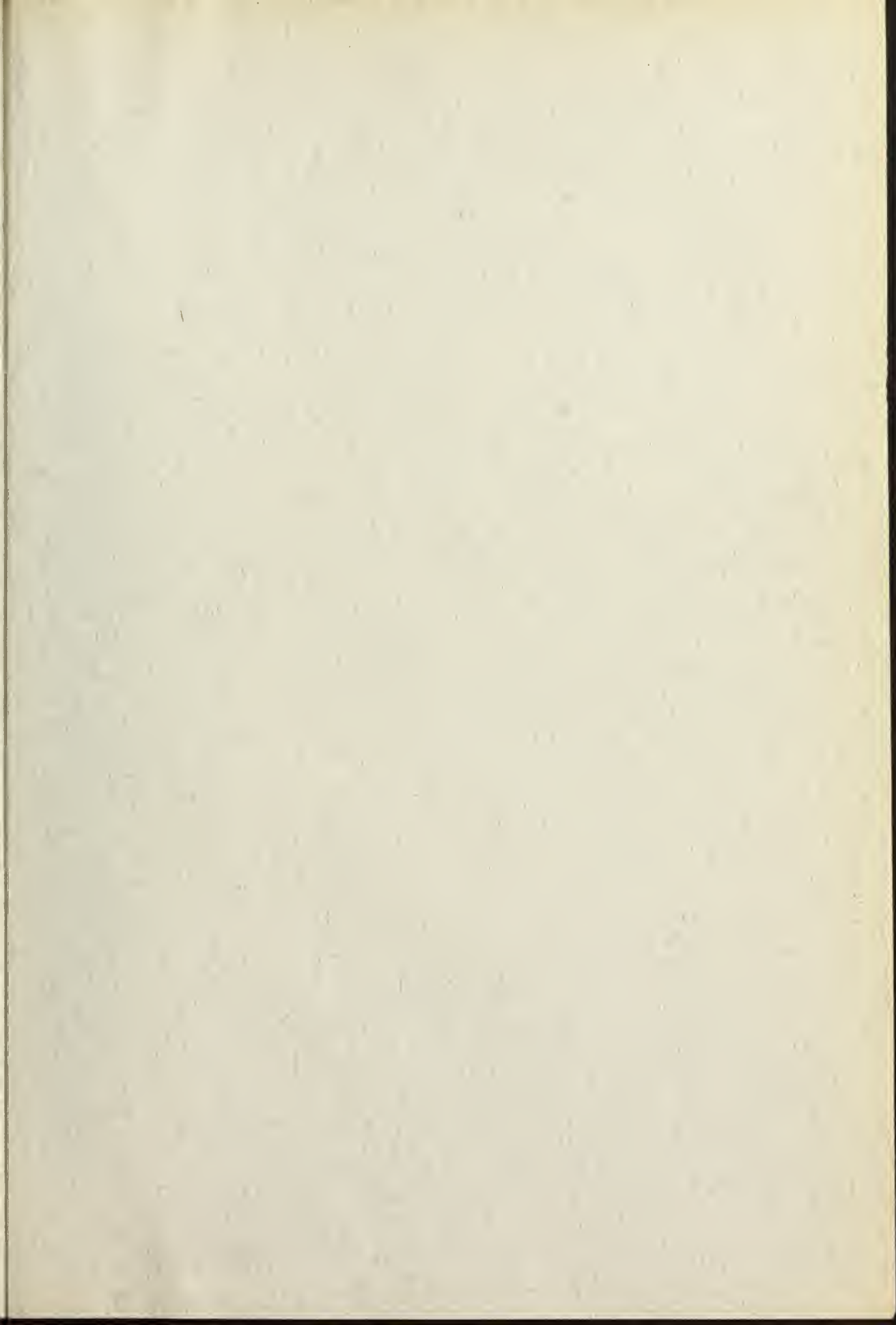
Xanthoma (Giant Cell) of the Wrist	
D. C. Conzett, M.D., and E. R. Young, M.D., Dubuque..	29
X-Ray Findings in Heart Disease, Significant	
Harold C. Bone, M.D., Des Moines.....	569
X-Ray, Modern Treatment by	
Aileen Mathiasen, M.D., Des Moines.....	533















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